



April 23, 2021

Mr. Todd Davis
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**Subject: Integrated Assessment: Preliminary Assessment/Site Inspection and Removal Site
Evaluation Report
TCE Clinton Engines, Maquoketa, Iowa
EPA SEMS Identification No. IAD980317432
U.S. EPA Region 7 START 4, Contract No. 68HE0719D0001
Task Order No. 19F0086.004
Task Monitors: Todd Davis, Iowa Site Assessment Manager
Yvonne Smith, EPA On-Scene Coordinator**

Dear Mr. Davis:

Tetra Tech, Inc. is submitting the enclosed Integrated Assessment report regarding the above-referenced site. If you have any questions or comments regarding this submittal, please contact the Project Manager at (816) 412-1788.

Sincerely,

A black rectangular box redacting the signature of the Project Manager.

START Project Manager

A black rectangular box redacting the signature of the Program Manager.

START Program Manager

Enclosures



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**INTEGRATED ASSESSMENT: PRELIMINARY ASSESSMENT/SITE INSPECTION (PA/SI)
AND REMOVAL SITE EVALUATION REPORT
TCE CLINTON ENGINES SITE
MAQUOKETA, IOWA**

EPA SEMS ID - IAD980317432

**Superfund Technical Assessment and Response Team (START) 5 Contract
Contract No. 68HE0719D0001, Task Order 19F0086, Subtask 004**

Prepared For:

U.S. Environmental Protection Agency
Region 7
Superfund Division
11201 Renner Boulevard
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April 23, 2021

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1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA), Region 7, under authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA), tasked Tetra Tech, Inc., (Tetra Tech) to conduct an Integrated Site Assessment (ISA) consisting of a combined Preliminary assessment (PA)/Site Inspection (SI) and Removal Site Evaluation (RSE) of the TCE Clinton Engine site (the site) in Maquoketa, Iowa, under Superfund Technical Assessment and Response Team (START) 5 Contract Number 68HE0719D0001, Task Order 0086.004.

Beginning in approximately 1945, the site had hosted industrial operations that included production of small engines. Clinton Engines acquired the property in 1950 from The Maquoketa Company. Both companies had used the property for production of small engines. The former facility included a foundry, machine shops, cast and painting operations, and underground storage tanks (UST) (Missman, Stanley & Associates, P.C. [MSA] 1999). The Clinton Engines Company officially closed in 1999, and the property was donated to the City of Maquoketa in 2000 (Iowa Department of Natural Resources [IDNR] 2020). Most property buildings had been razed by 2004, with only a former office/administration building left standing. The City has converted this building to a museum.

On March 23, 2005, the Contaminated Sites Section of IDNR received a Phase I/II Environmental Site Assessment report regarding the site dated October 15, 1999. An Initial Site Screening (ISS) completed on June 2, 2005, specified requirement for additional investigation (IDNR 2020). The site was enrolled in the voluntary Land Recycling Program (LRP) in April 2008. Since that time, further site assessment has been sporadic, focusing primarily on delineating extents of on-site and off-site groundwater contamination, and on-site vapor intrusion (VI). High concentrations of chlorinated solvents and toluene have been reported in groundwater at the following maximum concentrations:

| | |
|--|-----------------------------------|
| • Trichloroethene (TCE) | 9,580 micrograms per liter (µg/L) |
| • <i>cis</i> -1,2-Dichloroethene (DCE) | 7,190 µg/L |
| • <i>trans</i> -1,2-DCE | 1,044 µg/L |
| • 1,1,2- Trichloroethane (TCA) | 132 µg/L |
| • Vinyl chloride (VC) | 319 µg/L |
| • Toluene | 247,000 µg/L. |

These maximum concentrations were detected in on-site monitoring wells (MW) or off-site temporary wells as far as 900 feet north-northwest of the site.

Given the elevated chlorinated solvent concentrations in groundwater, IDNR required vapor sampling at the on-site office building that had been converted to a museum. Sub-slab samples collected at the museum in April, July, and October 2014, and in January 2015 contained TCE concentrations as high as 930 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). Follow-up indoor air sampling at the museum documented indoor air exceedances above levels considered safe. Concerned that the off-site groundwater contamination may be impacting nearby residential and commercial properties, IDNR requested federal assistance in a letter dated February 17, 2020 (IDNR 2020). The State requested assistance related to VI sampling at properties in proximity to known groundwater contamination to determine if receptors had been impacted by solvent releases from the facility.

In March 2020, START was tasked to assist EPA in preparation for an ISA at the site. Intents of this ISA were to characterize nearby residential and commercial properties for the potential for VI from the site. Results of the ISA were to be used to identify any threats to human health or the environment as a result of releases to soil and/or groundwater from the site.

ISA tasks included the following:

- Review available files associated with the facility from the Iowa Contaminated Sites database.
- Complete a site-specific quality assurance project plan (QAPP).
- Conduct field sampling activities.
- Prepare an ISA report.

Following receipt of the tasking documents, START received an EPA-prepared QAPP for VI sampling only. The intent was to expedite initial sampling at sensitive populations to determine if the elevated chlorinated volatile organic compounds (VOC) in groundwater were impacting nearby residential areas. An initial round of VI sampling was scheduled for the week of March 23, 2020; however, that sampling activity was cancelled due to the coronavirus outbreak. Subsequently, START prepared an addendum to the EPA-prepared QAPP that included a proposed approach to soil, soil-gas, and groundwater sampling (Tetra Tech 2020).

2.0 SITE DESCRIPTION

This section discusses the site location, geology and hydrogeology, recounts a previous investigation at the site, and presents waste characteristics of potential contaminants at the site.

2.1 SITE LOCATION AND DESCRIPTION

The City of Maquoketa (City) is on the south bank of the Maquoketa River in Jackson County, Iowa (Figure 1). According to the U.S. Census Bureau, it has an estimated population of 6,222 (U.S. Census Bureau 2019). The approximately 10.52-acre site is at 605 East Maple Street at the southeast corner of East Maple Street and South Clark Street in Maquoketa, Jackson County, Iowa. Maquoketa is in eastern Iowa about midway between Dubuque and Davenport.

The site is within a mixed-use area consisting of residential, agricultural, and commercial land. Surrounding the site to the north is commercial property, to the east is commercial and agricultural land, to the south is agricultural land, and to the west is single-family residential housing. The Clinton Engines Museum building is on the northwestern portion of the former manufacturing facility. The museum building was formerly an office building used by the company. Coordinates of the museum are 42.065849° north latitude and 90.658592° west longitude. The site is within the northeast quarter of the southwest quarter of Section 19, Township 84 North, Range 3 East, as depicted on the Maquoketa, Iowa, U.S. Geological Survey (USGS) 7.5-minute quadrangle map (USGS 1990). The site had been utilized for industrial purposes since approximately 1945. Clinton Engines acquired the property in 1950 from The Maquoketa Company. Both companies used the property for production of small engines. The former facility included a foundry, machine shops, cast and painting operations, and UST(s) (MSA 1999). The Clinton Engines Company officially closed in 1999 and the property was donated to the City in 2000.

2.2 GEOLOGY AND HYDROGEOLOGY

The site is in the Central Lowlands physiographic province of the United States. Jackson County is in eastern Iowa within the Southern Iowa Drift Plain. Locally, the Drift is described as moderate loess cover over thin glacial drift (City of Maquoketa & Alliance Water, Iowa Rural Water Association 2014). The Southern Iowa Drift Plain is characterized by a steeply rolling landscape, with the eastern part dominated by tabular uplands. Surfaces of the Southern Iowa Drift Plain are cut deeply into the Pre-Illinoisan glacial drift and are overlain by various thicknesses of Wisconsinian loess.

Soils in the study area are composed of the Downs-Fayette association—gently sloping to very steep, well-drained soils formed in loess, on uplands. Soils at the site are characterized as urban land, which is level to nearly level and has been altered by buildings, parking lots, and cut and fill to make the soil unidentifiable (U.S. Department of Agriculture [USDA] 1992).

Geology on site was observed in two bore holes (BH), BH-1 and BH-2, advanced in April 2013 (Impact7G 2014). BH-1 was in the south-central portion of the site, and BH-2 was in the north-central part of the site. BH-1 was advanced to 38 feet below ground surface (bgs) where limestone was reported. Materials logged in the hole were primarily silt with some clay layers. Interspersed in the silt and clay were fine and medium sands from 12 to 22, 29 to 30, and 35 to 37 feet bgs. BH-2 was advanced to 90 feet bgs. This boring also contained primarily silt with more clay from 75 to 90 feet bgs where limestone was encountered. Fine to medium sands were logged from 18 to 25 and 58 to 64 feet bgs. Encounter with the water table occurred within 13 to 16 feet below grade.

The Silurian-aged carbonate rocks are the uppermost bedrock in Maquoketa. The stratigraphic log for City Well #6, about 0.3 mile southwest of the site, begins at 125 feet bgs in Silurian (undifferentiated) deposits and reaches a total depth of 2,325 feet (Iowa Geologic Survey [IGS] 2020). The Ordovician-aged Maquoketa Formation (mainly shale) was encountered from 245 to 270 feet bgs. The Maquoketa and underlying Ordovician rocks act as a local confining layer, protecting Maquoketa's water source of the St. Peter Sandstone Aquifer (encountered within 799-844 feet bgs) and the Mt. Simon Sandstone Aquifer (encountered from 1,750 feet bgs to total depth). Cambrian rocks below the St. Lawrence Formation (encountered at 1,215 feet bgs) are indicated as the Well #6 aquifer (IGS 2020).

City Well #5, about 0.5 mile west of Well #6, also produces from the Cambrian rocks below the St. Lawrence Formation (encountered at 1,210 feet bgs). The stratigraphic log for Well #5 indicates presence of Peoria Loess from 0 to 35 feet bgs, glacial till from 35 to 50 feet bgs, and Pre-Illinoisan alluvial deposits sands and gravels from 50 to 156 feet bgs (IGS 2020).

Cambrian-Ordovician Aquifer

Yields from the Cambrian-Ordovician aquifer are the most consistent and dependable of any aquifer in the study area. The aquifer has been extensively developed for municipal and industrial supplies throughout the area; actual yields range from 100 to 2,300 gallons per minute (gpm). Potential yields of at least 500 gpm may be anticipated from properly developed wells in most places. Yields of 1,000 gpm can be obtained in all but the easternmost part of the area, if drawdown of water levels is not a major concern (USGS, IGS 1978).

The upper part of the Cambrian-Ordovician Aquifer consists of the Ordovician St. Peter Sandstone and Prairie du Chien Formation, and Cambrian Jordan Sandstone. Whether areas of this aquifer can furnish high yields generally depends on thickness and degree of cementation of the Jordan Sandstone. Wells completed in this portion of the aquifer typically produce at least 50 gpm, with yields up to 300 gpm not unusual (USGS 1978).

The lower part of the Cambrian-Ordovician Aquifer consists of three Cambrian-aged formations (Wonewoc, Eau Claire, and Mt. Simon), collectively referred to as the “Dresbach” aquifer. Yields in this portion of the aquifer range from 280 to 2,560 gpm, and yields of at least 500 gpm are common in most wells. Yields are highest near Clinton, Iowa, decreasing westward, where water quality becomes poor. The Maquoketa area is an exception to this, as City wells 4, 5, and 6 have high production capacities from this aquifer. Geologic data indicate this may be due to faulting within the Plum River fault zone, bringing the higher quality water in the Jordan Sandstone into juxtaposition with the Galesville Sandstone Member of the Wonewoc Formation (City of Maquoketa & Alliance Water, Iowa Rural Water Association 2014).

2.3 PREVIOUS INVESTIGATION

The following summarizes site discovery and subsequent investigations by various contractors.

2.3.1 1999 Phase I/II Environmental Site Assessment

In October 1999, MSA completed a Phase I/II Environmental Site Assessment of the site on behalf of the City (MSA 1999). Intents of the assessment were to identify recognized environmental conditions (REC) to the site and conduct limited environmental sampling to verify or eliminate identified RECs. The Phase I included a site reconnaissance on September 10, 1999, and the ensuing Phase II included limited soil and groundwater sampling from eight boreholes on September 23 and 24, 1999. RECs identified during the Phase I included two existing USTs, foundry slag and sands, an open pit in the maintenance room containing oily waste, five previously removed USTs (removed around 1986), two aboveground storage tanks (AST), several areas of stained concrete, a former concrete pad for staging used oil drums, and a former chemical storage room. The USTs had contained gasoline, diesel, waste oil, and toluene (paint thinner). During the Phase II, eight boreholes were advanced, and temporary wells were installed in five of the boreholes. Notable analytical results from the eight boreholes included high levels of toluene in soil (604 milligrams per kilogram [mg/kg]) and groundwater (673,000 µg/L) in a boring advanced near a former paint room, and TCE, *cis*-1,2-DCE, and VC in groundwater (at 170, 1,940, and 494 µg/L, respectively) near a concrete pad in the east central portion of the property. MSA recommended that the City enroll the site in the Iowa Land Recycling Program (LRP).

IDNR did not receive this Phase I/II report until March 23, 2005 (IDNR 2020). An Initial Site Screening completed by IDNR in June 2005 specified requirement for additional site characterization. The site was enrolled in the voluntary LRP in April 2008. Accompanying the enrollment application was background information indicating that additional site investigation activities had occurred in 2006, including installation and sampling of MW-10 through MW-17. Apparently, additional wells had been installed (MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, and MW-8); however, site files did not indicate who installed the wells or when these had been installed. Soil sampling results indicated toluene (up to 285 mg/kg), TCE (up to 8.37 mg/kg) *cis*-1,2-DCE (up to 3.31 mg/kg), and VC (up to 0.112 mg/kg) in borings advanced east of the former office building. Groundwater samples from MW-10, southeast of the former office building, contained toluene (up to 3,000 µg/L), *cis*-1,2-DCE (up to 776 µg/L), TCE (up to 524 µg/L), and VC (up to 147 µg/L). Information pertaining to removal of three USTs (two 20,000-gallon and one 8,000-gallon) in 2001-2002 also came with the enrollment application. Four other 1,000- to 2,000-gallon tanks had been removed in 1989. This information was slightly different than was reported in the 1999 Phase I/II ESA.

2.3.2 2012 – 2019 Investigations under the Iowa LRP

Numerous investigations under the LRP at the site have included application of direct-push technology (DPT) techniques to advance soil borings for geologic logging and to sample groundwater from temporary wells and existing MWs; and an investigation of sub-slab vapors and indoor air at the former office building that the City had converted to a museum. The first investigation, finished in June 2013, involved collection of groundwater samples from seven existing MWs, with fixed-laboratory analysis for VOCs; advancement and sampling of 13 on- and off-site DPT wells at multiple depths, with on-site analysis for VOCs; and advancement and logging of two (37 and 90 feet bgs) on-site soil borings (Impact7G 2013). Highest VOC concentrations in MWs were reported in MW-2 and MW-4, where TCE was detected at a maximum concentration of 8,000 µg/L, *cis*-1,2-DCE concentration was reported as high as 45,900 µg/L, VC concentration as high as 2,340 µg/L, and toluene concentration as high as 125,000 µg/L. MW-2 is near a former paint booth about 70 feet southeast of the former office, and MW-4 is in the southeast portion of the site. Off-site DPT well samples analyzed by a mobile lab yielded *cis*- and *trans*-1,2-DCE, TCE, and VC concentrations above Iowa's Statewide Standard for non-protected groundwater, with maximum reported concentrations of 6,893, 1,044, 4,258, and 163 µg/L, respectively.

A 2014 second-characterization sampling event delineated the extent of groundwater contamination (Impact7G 2014). Sampling activities completed during the months of April and July 2014 are as follows:

- Advancing DPT groundwater sampling equipment at 17 on- and off-site locations, and collecting groundwater samples at multiple discrete intervals to assess the vertical chemical gradient of the groundwater plume. Groundwater analysis involved use of an on-site gas chromatograph (GC) system.
- Conducting two of four quarterly sub-slab soil-gas sampling events in the basement of the museum building on the property for analyses to assess VI risk to future occupants.
- Completing elevation and groundwater measurements from tops of casing at existing MWs on the site to better establish groundwater flow direction.
- Collecting two subsurface soil samples at 7 and 15 feet bgs at two locations at the eastern end of the site to investigate potential contamination source areas.

DPT groundwater samples collected off site contained *cis*-1,2-DCE and TCE at concentrations above Statewide Standards for non-protected aquifers. No VOCs were detected in either soil sample collected. Sub-slab vapor samples collected under the museum contained TCE up to 930 µg/m³ (Impact7G 2020). Groundwater flow was determined to be toward the north-northeast across the site, although no elevations or depth to water measurements were provided in the report.

A VI report submitted in August 2018 documented air sampling efforts in the Clinton museum building. Indoor air sampling results indicated TCE concentrations in air collected from the basement and first level of the structure at 23 and 19 µg/m³, respectively (Impact7G 2020).

In May and June 2019, 22 additional DPT locations were sampled at multiple depths with intent to delineate the extent of groundwater contamination. Existing on-site MWs were sampled, and two wells were installed to replace damaged or missing wells. Results from this effort included the highest concentration of TCE detected during all events (9,580 µg/L) in a sample collected within 56 to 60 feet bgs about 300 feet north-northwest of the site. Impact7G concluded that concentrations of solvents including TCE, *cis*- and *trans*-1,2-DCE, toluene, 1,1,2-TCA, and VC exceeded the IDNR Statewide Standards for nonprotected groundwater (Impact7G 2019). Exceedances of source action levels to maximum depth explored of 79 feet bgs were identified at distances from the site up to 0.64 mile northeast, 0.2 mile south-southeast, 0.06-mile west, and 0.12 mile northwest. Potential solvent exposure pathways into residential and commercial properties include groundwater vapor to confined space receptors (i.e., basements, sanitary sewer mains, and service lines), sub-slab vapor accumulation, and permeation of solvents into water mains and service lines.

2.4 WASTE CHARACTERISTICS

This section discusses waste characteristics of known or possibly present contaminants at the site.

2.4.1 Trichloroethene

TCE is a nonflammable chlorinated solvent, a colorless liquid that quickly evaporates in air and has a somewhat sweet odor and a sweet, burning taste. TCE was introduced as a dry cleaning solvent in the United States in 1930 (State Coalition for Remediation of Drycleaners [SCRD] 2007). Many dry cleaning operations during the early-late 1900s used TCE. In addition to dry cleaning, TCE has been used mainly as a solvent to remove grease from metal parts and as a precursor chemical in industry (ATSDR 2019a). It is also an ingredient in adhesives, paint removers, typewriter correction fluids, and spot removers. TCE is not found naturally in the environment. However, it has been found in underground water sources and many surface waters as a result of manufacture, use, and disposal of the chemical (ATSDR 2019a).

TCE degrades to the *cis* and *trans* isomers of 1,2-DCE and to 1,1-DCE. These daughter products eventually degrade to VC. TCE has low to moderate mobility in soil and may leach slowly to groundwater. Its solubility in groundwater is low (0.02%), and its specific gravity is 1.62 (Centers for Disease Control and Prevention [CDC] 2019). TCE tends to accumulate at greater depths with increasing distance from the source area.

2.4.2 1,2-Dichloroethene

1,2-DCE is a highly flammable, colorless liquid with a sharp, harsh odor. It is used to produce solvents and in chemical mixtures. Very small amounts of 1,2-DCE in air (about 17 parts per million [ppm]) are detectable by odor; either or both the *cis* and *trans* isomers can be present (ATSDR 2011).

2.4.3 Toluene

Toluene is a clear, colorless liquid with a distinctive smell. It is produced during production of gasoline and other fuels from crude oil, and in creation of coke from coal. Toluene is used in production of paints, paint thinners, fingernail polish, lacquers, adhesives, and rubber, and in some printing and leather tanning processes. Toluene is also used in the manufacture of other chemicals, nylon, and plastics. It is also added to gasoline along with benzene and xylene to improve octane ratings. Studies of workers and animals exposed to toluene generally indicate that toluene is not carcinogenic. Toluene is expected to

have high to moderate mobility in soil; the soil adsorption coefficient (K_{oc}) values of 37-178 indicate that toluene is not anticipated to strongly bind to soil.

2.4.4 Vinyl Chloride

VC is a colorless gas at room temperature. VC exists in liquid form if kept under high pressure or at low temperatures. It burns easily and it is not stable at high temperatures. VC has a mild, sweet odor. It is a manufactured substance that does not occur naturally. It can form when other substances such as TCE and PCE are broken down. VC is used to make polyvinyl chloride (PVC). PVC is used to make a variety of plastic products, including pipes, wire, cable coatings, and packaging materials. VC is also known as chloroethene, chloroethylene, and ethylene monochloride (ATSDR 2019b).

3.0 FIELD ACTIVITIES

This section discusses ISA activities at the site over three separate mobilizations. The first event in early June 2020 involved collection of VI samples (sub-slab vapor, indoor air, and ambient air) at properties near the site to determine if high concentrations of TCE in groundwater were impacting indoor air via VI. The second mobilization, the week of July 20, 2020, included VI sampling at additional properties, soil gas sampling, drinking water well sampling of domestic and municipal wells, and soil sampling along sanitary sewer lines near the site. Figure 3 shows samples collected in June and July 2020. The third sampling event occurred in February 2021 and consisted of sampling sub-slab vapor, indoor air, and ambient air. Sampling was limited to homes sampled during Phases I and II where TCE contamination had been detected. These locations are shown on Figure 3. Unless otherwise noted in this report, sampling and analytical procedures followed standard operating procedures (SOP) specified in the approved, site-specific QAPP and QAPP addendum (EPA 2020d, Tetra Tech 2020). The following information was documented for each sample collected during the ISA: sample location, location description, depth, collection date and time, analyses to be performed, and air sampling information.

After sample collection, soil and water samples were labeled and packaged accordingly, and placed in a cooler and maintained at a temperature at or below 4 degrees Celsius (°C). Air samples were collected in Summa containers or Tedlar bags and stored at ambient temperatures pending analysis. The field logbook is in Appendix B. Soil boring logs are in Appendix C. The photolog of field work is in Appendix D. Access Agreements are in Appendix E. Chain-of-custody records are in Appendix F. Samples collected under Analytical Services Requests (ASR) 8537, 8595, and 8612 were hand-delivered to the EPA Region 7 laboratory in Kansas City, Kansas.

3.1 DIRECT-PUSH TECHNOLOGY SOIL GAS SAMPLING

The City verbally granted access to START to sample soil gas at 12 locations northeast of the site on E. Maple Street, farther northeast of the site on E. Platt Street, and west of the site along S. Clark and S. Matteson Streets. At each sampling location, by use of a DPT rig, steel rods were advanced to approximately 8 feet bgs, subsequently to be retracted about 6 inches to create a void space to allow collection of soil gas vapors. The soil-gas samples were collected through the steel rods via disposable polyethylene tubing connected to the bottom of the rod string and a Tedlar bag on the ground surface. By use of a vacuum pump, air in the tubing was evacuated prior to connection of the tubing to the Tedlar bag. At least two volumes of soil gas was purged from the polyethylene tube by use of a vacuum pump. When the vacuum in the tube had returned to atmospheric pressure, a vacuum chamber (Pelican case)

containing a 3-liter Tedlar bag was connected to the top of the steel rod with plastic tubing, and a soil gas sample was drawn into the Tedlar bag by use of the vacuum pump. A subcontracted mobile laboratory operated by Below Ground Surface (BGS) analyzed soil gas samples on site for TCE, *cis*- and *trans*-1,2 DCE, VC, and toluene via a GC equipped with a photoionization detector (PID) and flame ionization detector (FID). Table 1 below lists locations of the soil gas samples collected.

TABLE 1
DPT SOIL GAS SAMPLE SUMMARY
TCE CLINTON ENGINE SITE
MAQUOKETA, IOWA

| Soil Boring Number | Sample Depth (ft bgs) | Sample Date | Sample Time | Geographic Location | |
|--------------------|-----------------------|-------------|-------------|---------------------|----------------|
| | | | | North Latitude | West Longitude |
| SG-01 | 7.5-8 | 7/21/2020 | 10:15 | 42.06572 | 90.66048 |
| SG-02 | 7.5-8 | 7/21/2020 | 11:00 | 42.06638 | 90.66047 |
| SG-03 | 7.5-8 | 7/21/2020 | 14:25 | 42.06477 | 90.65946 |
| SG-04 | 7.5-8 | 7/21/2020 | 13:55 | 42.06540 | 90.65944 |
| SG-05 | 7.5-8 | 7/21/2020 | 13:20 | 42.06601 | 90.65944 |
| SG-06 | 7.5-8 | 7/21/2020 | 15:40 | 42.06639 | 90.65679 |
| SG-07 | 7.5-8 | 7/21/2020 | 15:10 | 42.06570 | 90.65509 |
| SG-08 | 7.5-8 | 7/21/2020 | 12:45 | 42.06691 | 90.65943 |
| SG-09 | 7.5-8 | 7/21/2020 | 12:00 | 42.06787 | 90.66051 |
| SG-10 | 7.5-8 | 7/21/2020 | 16:15 | 42.06926 | 90.65612 |
| SG-11 | 7.5-8 | 7/21/2020 | 17:05 | 42.06920 | 90.65138 |
| SG-12 | 7.5-8 | 7/21/2020 | 17:30 | 42.06962 | 90.64702 |

Notes:

ft bgs Feet below ground surface
SG Soil gas

3.2 DIRECT-PUSH TECHNOLOGY SOIL SAMPLING

The City verbally granted access to START to sample soil near sanitary sewer lines bordering the site. Using a DPT rig operated by subcontractor BGS, START advanced borings at six locations near city sewer lines north (on east Maple Street) and west (on South Clark Street) of the site. Samples were collected at depths equal to those directly below the sewer line (9 to 10 feet bgs) and above the water table (15 to 16 feet bgs) (see Figure 3 in Appendix A). This sampling was to determine if solvents may have been discharged to the sanitary sewer and subsequently released from joints or cracks in the sewer line. At each DPT soil sampling location, a soil sampler containing a disposable PVC liner was advanced via the DPT rig to the desired depth. Soil cores were field-screened by use of a handheld PID for elevated organic vapors indicative of VOCs. No elevated vapor readings were noted.

Table 2 summarizes soil samples collected during the ISA.

TABLE 2
DPT SOIL SAMPLE SUMMARY
TCE CLINTON ENGINE SITE
MAQUOKETA, IOWA

| Soil Boring Number | Sample Depth (ft bgs) | EPA Sample Number | Sample Date | Sample Time | Geographic Location | |
|--------------------|-----------------------|-------------------|-------------|-------------|---------------------|----------------|
| | | | | | North Latitude | West Longitude |
| SB-01 | 9-10 | 8595-1 | 7/22/20 | 09:34 | 42.06466 | 90.65932 |
| | 15-16 | 8595-2 | | 09:50 | | |
| SB-02 | 9-10 | 8595-3 | | 10:15 | 42.06540 | 90.65932 |
| | 15-16 | 8595-4 | | 10:30 | | |
| SB-03 | 9-10 | 8595-5 | | 10:55 | 42.06631 | 90.65936 |
| | 9-10 | 8595-5-FD | | 10:58 | | |
| | 15-16 | 8595-7 | | 11:15 | | |
| SB-04 | 9-10 | 8595-8 | | 11:30 | 42.06636 | 90.65918 |
| | 15-16 | 8595-9 | | 11:50 | | |
| SB-05 | 9-10 | 8595-10 | | 12:15 | 42.06633 | 90.65853 |
| | 15-16 | 8595-11 | | 12:25 | | |
| SB-06 | 8-9 | 8595-12 | | 12:54 | 42.06697 | 90.65935 |
| | 15-16 | 8595-13 | | 13:00 | | |

Notes:

DPT Direct-push technology
EPA U.S. Environmental Protection Agency
FD Field duplicate
ft bgs Feet below ground surface
SB Soil boring

Within each sampled interval, a grab sample was collected for VOCs analysis in accordance with EPA SW-846 Method 5035; each grab sample consisted of two 40-milliliter (mL) vials each preserved with sodium bisulfate and containing approximately 5 grams of soil, one 40 mL vial preserved with methanol and containing approximately 5 grams of soil, and one unpreserved container packed with soil (used for determination of moisture content). After completion of sampling activities, all DPT boreholes were plugged with bentonite from bottom of hole to ground surface. Any disturbance to surface pavement was patched with appropriate material.

3.3 VAPOR INTRUSION SAMPLING

The following section describes VI sampling at residential and commercial properties near the site. Access agreements for VI sampling are in Appendix E.

3.3.1 Sub-Slab Soil Gas Sampling

START conducted sub-slab vapor sampling at the site based on grants of access by property owners. For sub-slab port installation, a hammer drill equipped with a 5/8-inch-diameter concrete bit was used to penetrate the concrete slab at each location. An approximately 4-inch-long, 5/8-inch-diameter stainless steel tube (vapor pin) with a silicon fitting was inserted through the drill hole into the sub-slab material. A removable plug on top allowed personnel to sample sub-slab vapor and then reseal the probe. A successful leak detection test occurred before collection of air samples.

Collection of sub-slab vapor samples accorded with EPA SOP 2318.07. At each location, about 6 inches of disposable, 0.25-inch-diameter perfluoroalkoxy (PFA) tubing connected the top of the port to an evacuated Summa canister for collection of a sub-slab vapor sample. Sub-slab vapor was collected as grab samples, with the Summa canister opened and then shut off as pressure dropped to about -2 to -4 inches of mercury (inHg). After sampling, the sub-slab port was capped.

Table 3 summarizes sub-slab vapor sampling at the site.

TABLE 3
SUB-SLAB SOIL GAS SAMPLE SUMMARY
TCE-CLINTON ENGINE SITE
MAQUOKETA, IOWA

| EPA Sample Number | Address | Location | Sample Date | Sample Time |
|-----------------------------------|-----------------|-------------------------------------|-------------|-------------|
| Sub-slab Vapor – June 2020 | | | | |
| 8537-16 | S. Clark St. | Basement, back left corner | 6/3/2020 | 08:47 |
| 8537-17 | S. Matteson St. | Basement, left room by dryer | 6/3/2020 | 09:19 |
| 8537-18 | S. Matteson St. | Basement, main room far wall | 6/3/2020 | 11:19 |
| 8537-19 | E. Maple St. | Basement, center of right wall | 6/3/2020 | 13:10 |
| 8537-20 | S. Matteson St. | Basement, center between rooms | 6/3/2020 | 14:35 |
| 8537-21 | S. Otto St. | Basement, center of far wall | 6/3/2020 | 15:00 |
| 8537-22 | E. Platt St. | Basement, back right corner | 6/3/2020 | 14:34 |
| 8537-23 | S. Matteson St. | Basement, back right corner (dryer) | 6/3/2020 | 17:02 |
| 8537-24 | S. Matteson St. | Basement, by stairs under rug | 6/3/2020 | 17:41 |
| 8537-25 | S. Matteson St. | Basement, right side back corner | 6/3/2020 | 18:05 |
| Sub-slab Vapor – July 2020 | | | | |
| 8612-16 | N. Dearborn St. | Basement Port | 7/21/2020 | 09:15 |
| 8612-17 | E. Platt St. | Basement Port | 7/21/2020 | 10:24 |
| 8612-18 | E. Maple St. | West Shop Port | 7/21/2020 | 10:46 |
| 8612-19 | E. Maple St. | Furnace Closet Port | 7/21/2020 | 12:08 |
| 8612-20 | S. Matteson St. | Basement Port | 7/21/2020 | 12:56 |
| 8612-21 | S. Matteson St. | Basement Port | 7/21/2020 | 13:13 |
| 8612-22 | E. Maple St. | Basement Port | 7/21/2020 | 14:44 |
| 8612-24 | S. Clark St. | Basement Port | 7/21/2020 | 15:37 |

TABLE 3 (Continued)

**SUB-SLAB SOIL GAS SAMPLE SUMMARY
TCE-CLINTON ENGINE SITE
MAQUOKETA, IOWA**

| EPA Sample Number | Address | Location | Sample Date | Sample Time |
|---------------------------------------|-------------------|----------------------------------|--------------------|--------------------|
| 8612-25 | █ E. Platt St. | Basement Port | 7/21/2020 | 16:48 |
| 8612-26 | █ S. Matteson St. | Basement Port (back room) | 7/21/2020 | 17:12 |
| 8612-27 | █ E. Platt St. | Basement Port | 7/21/2020 | 17:41 |
| 8612-28 | █ E. Maple St. | Shop Port | 7/22/2020 | 14:12 |
| Sub-slab Vapor – February 2021 | | | | |
| 8778-3 | █ E. Maple St. | West Shop Port | 2/23/2021 | 09:56 |
| 8778-5 | █ E. Maple St. | Furnace Closet Port | 2/23/2021 | 10:21 |
| 8778-8 | █ E. Platt St. | Main Floor, Kitchen | 2/23/2021 | 13:46 |
| 8778-11 | █ S. Matteson St. | Basement, right side back corner | 2/23/2021 | 17:40 |

Notes:

EPA U.S. Environmental Protection Agency

3.3.2 Indoor Air and Ambient Air Sampling

Based on access from property owners, START conducted indoor air and ambient air sampling at the site. Evacuated Summa canisters were fitted with 24-hour passive flow regulators and located at living areas in the residential homes or common areas of businesses. Collection of indoor air and ambient air samples accorded with EPA Region 7 SOP 4231.1704. In each building, indoor air and ambient air samples were collected at roughly the same time as sub-slab vapor samples. Indoor air and ambient air samples were analyzed for VOCs at the EPA Region 7 laboratory according to EPA Region 7 SOP 3230.04.

Table 4 summarizes indoor air and ambient air sampling at the site.

TABLE 4
INDOOR AIR AND AMBIENT AIR SAMPLE SUMMARY
TCE-CLINTON ENGINE SITE
MAQUOKETA, IOWA

| EPA Sample Number | Address | Location | Sample Start Date - Time | Sample End Date - Time | Sampling Duration |
|-------------------------------|-------------------|------------------------------|--------------------------|------------------------|-------------------|
| Indoor Air – June 2020 | | | | | |
| 8537-1 | █ S. Matteson St. | Main Floor, Dining Room | 6/1/2020 – 19:05 | 6/2/2020 – 17:24 | 22 hr. 19 min. |
| 8537-2 | █ S. Clark St. | Main Floor, Living Room | 6/2/2020 – 09:34 | 6/3/2020 – 08:20 | 22 hr. 46 min. |
| 8537-3 | █ S. Matteson St. | Main Floor, Dining Room | 6/2/2020 – 10:16 | 6/3/2020 – 09:20 | 23 hr. 04 min. |
| 8537-5 | █ S. Matteson St. | Main Floor, Kitchen | 6/2/2020 – 11:42 | 6/3/2020 – 11:07 | 23 hr. 25 min. |
| 8537-7 | █ S. Clark St. | Main Floor, Living Room | 6/2/2020 – 12:28 | 6/3/2020 – 09:36 | 21 hr. 8 min. |
| 8537-8 | █ E. Maple St. | Main Floor, Main Area | 6/2/2020 – 14:06 | 6/3/2020 – 13:07 | 23 hr. 1 min. |
| 8537-9 | █ S. Matteson St. | Main Floor, Living Room | 6/2/2020 – 14:43 | 6/3/2020 – 13:39 | 23 hr. 5 min. |
| 8537-10 | █ S. Matteson St. | Main Floor, Living Room | 6/2/2020 – 15:00 | 6/3/2020 – 14:09 | 23 hr. 9 min. |
| 8537-11 | █ S. Otto St. | Main Floor, Dining Room | 6/2/2020 – 15:43 | 6/3/2020 – 14:44 | 23 hr. 1 min. |
| 8537-12 | █ S. Otto St. | Main Floor, Kitchen | 6/2/2020 – 16:08 | 6/3/2020 – 15:14 | 23 hr. 6 min. |
| 8537-13 | █ E. Platt St. | Main Floor, Kitchen | 6/2/2020 – 16:41 | 6/3/2020 – 15:48 | 23 hr. 7 min. |
| 8537-14 | █ E. Platt St. | Main Floor – Kitchen | 6/2/2020 – 17:07 | 6/3/2020 – 16:23 | 23 hr. 16 min. |
| 8537-15 | █ S. Matteson St. | Main Floor, Dining Room | 6/2/2020 – 17:38 | 6/3/2020 – 16:56 | 23 hr. 18 min. |
| Indoor Air – July 2020 | | | | | |
| 8612-1 | █ E. Maple St. | Main Floor, Living Room | 7/20/2020 – 09:49 | 7/21/2020 – 08:56 | 23 hr. 7 min. |
| 8612-2 | █ N. Dearborn St. | Main Floor, Living Room | 7/20/2020 – 10:35 | 7/21/2020 – 09:12 | 22 hr. 37 min. |
| 8612-3 | █ E. Platt St. | Auditorium | 7/20/2020 – 11:10 | 7/21/2020 – 10:20 | 23 hr. 10 min. |
| 8612-4 | █ E. Maple St. | Left Building Shop (west) | 7/20/2020 – 11:53 | 7/21/2020 – 10:44 | 22 hr. 51 min. |
| 8612-5 | | Right Building Office (east) | 7/20/2020 – 11:55 | 7/21/2020 – 10:58 | 23 hr. 3 min. |
| 8612-6 | █ E. Maple St. | Room with Furnace Closet | 7/20/2020 – 12:38 | 7/21/2020 – 12:03 | 23 hr. 25 min. |
| 8612-7 | █ E. Maple St. | Main Floor, Main Room | 7/20/2020 – 12:55 | 7/21/2020 – 12:22 | 23 hr. 27 min. |
| 8612-8 | █ S. Matteson St. | Main Floor, Living Room | 7/20/2020 – 13:30 | 7/21/2020 – 12:54 | 23 hr. 24 min. |

TABLE 4 (Continued)

**INDOOR AIR AND AMBIENT AIR SAMPLE SUMMARY
TCE-CLINTON ENGINE SITE
MAQUOKETA, IOWA**

| EPA Sample Number | Address | Location | Sample Start Date - Time | Sample End Date - Time | Sampling Duration |
|--|-------------------|---------------------------|-------------------------------------|-----------------------------------|------------------------------|
| 8612-9 | █ S. Matteson St. | Main Floor, Office Room | 7/20/2020 – 13:57 | 7/21/2020 – 13:10 | 23 hr. 13 min. |
| 8612-10 | █ E. Maple St. | Main Floor, Living Room | 7/20/2020 – 15:28 | 7/21/2020 – 14:40 | 23 hr. 12 min. |
| 8612-11 | █ S. Clark St. | Main Floor – Kitchen | 7/20/2020 – 16:02 | 7/21/2020 – 15:34 | 23 hr. 32 min. |
| 8612-12 | █ E. Platt St. | Main Floor, Front Desk | 7/20/2020 – 16:25 | 7/21/2020 – 15:58 | 23 hr. 33 min. |
| 8612-13 | █ E. Platt St. | Main Floor, Living Room | 7/20/2020 – 17:22 | 7/21/2020 – 16:45 | 23 hr. 23 min. |
| 8612-14 | █ S. Matteson St. | Main Floor, Living Room | 7/20/2020 – 17:55 | 7/21/2020 – 17:08 | 23 hr. 13 min. |
| 8612-15 | █ E. Platt St. | Main Floor, Living Room | 7/20/2020 – 18:30 | 7/21/2020 – 17:38 | 23 hr. 8 min. |
| 8612-23 | █ E. Maple St. | Main Office Area | 7/21/2020 – 15:22 | 7/22/2020 – 14:09 | 22 hr. 47 min. |
| Indoor Air – February 2021 | | | | | |
| 8778-1 | █ E. Platt St. | Main Floor, Living Room | 2/22/2021 – 17:29 | 2/23/2021 – 16:10 | 22 hr. 41 min. |
| 8778-2 | █ E Maple St. | Left Building Shop (west) | 2/23/2021 – 09:49 | 2/24/2021 – 08:45 | 22 hr. 56 min. |
| 8778-4 | █ E. Maple St. | Room with Furnace Closet | 2/23/2021 – 10:17 | 2/24/2021 – 08:50 | 22 hr. 33 min. |
| 8778-6 | █ N. Dearborn St. | Main Floor, Living Room | 2/23/2021 – 13:01 | 2/24/2021 – 11:42 | 22 hr. 41 min. |
| 8778-7 | █ E. Platt St. | Main Floor, Kitchen | 2/23/2021 – 13:43 | 2/24/2021 – 12:14 | 22 hr. 31 min. |
| 8778-9 | █ E. Maple St. | Main Floor, Living Room | 2/23/2021 – 16:44 | 2/24/2021 – 15:28 | 22 hr. 44 min. |
| 8778-10 | █ S. Matteson St. | Main Floor, Dining Room | 2/23/2021 – 17:34 | 2/24/2021 – 16:20 | 22 hr. 46 min. |
| Ambient Air – June 2020 and February 2021 | | | | | |
| 8537-4 | █ S. Matteson St. | Backdoor Steps | 6/2/2020 – 10:43 | 6/3/2020 – 09:56 | 23 hr. 13 min. |
| 8537-6 | █ S. Clark St. | Backdoor Steps | 6/2/2020 – 12:24 | 6/3/2020 – 09:40 | 21 hr. 16 min. |
| 8778-12 | █ E Maple St. | Museum Parking Lot | 2/23/2021 – 18:10 | 2/24/2021 – 16:55 | 22 hr. 45 min. |

Notes:

EPA U.S. Environmental Protection Agency

3.4 GROUNDWATER SAMPLES

Groundwater samples were collected from five domestic wells downgradient (four northeast and one east of the site) and from the three municipal wells serving the City of Maquoketa. The City verbally granted access to EPA and Tetra Tech, and sampling proceeded with the aid of Alliance Water (the operator of the City water system). City wells 4, 5, and 6 are all completed in the Cambrian-Ordovician aquifer at depths ranging from 1,315 to 2,325 feet bgs. At all wells, samples were collected as close to the well head as possible, prior to any water treatment. Before sample collection, wells were purged for approximately 5 minutes. Drinking water samples were collected directly into three 40-mL vials, each preserved with hydrochloric acid (HCl) for VOCs analysis.

Table 5 summarizes drinking water samples collected from domestic and municipal wells.

TABLE 5
DRINKING WATER WELL SAMPLE SUMMARY
TCE-CLINTON ENGINE SITE
MAQUOKETA, IOWA

| Well Registration Number | Well Type | Well Depth (feet bgs) | EPA Sample Number | Sample Date | Sample Time |
|--------------------------|-------------------------------------|-----------------------|-------------------|-------------|-------------|
| 2111472 | Domestic [REDACTED] Hwy 62 | 150 | 8595-101 | 07/21/2020 | 11:27 |
| 2079264 | Domestic [REDACTED] Pershing Rd. | 200 | 8595-102 | | 13:50 |
| | | | 8595-102-FD | | 13:55 |
| 2097424 | Domestic [REDACTED] Pershing Rd. | 180 | 8595-104 | | 14:10 |
| 2085558 | Domestic [REDACTED] Hwy 62 | Unknown | 8595-105 | | 14:25 |
| 2161984 | Domestic [REDACTED] Hwy 64 | 140 | 8595-106 | | 16:18 |
| 7966 | Municipal Well #4 | 1,315 | 8595-107 | 7/22/2020 | 14:40 |
| 13997 | Municipal Well #5 | 2,309 | 8595-108 | | 15:00 |
| 24834 | Municipal Well #6 | 2,325 | 8595-109 | | 15:15 |

Notes:

bgs Below ground surface
EPA U.S. Environmental Protection Agency
FD Field duplicate

3.5 QUALITY CONTROL SAMPLES

One field duplicate groundwater sample (█████ Pershing [8595-102-FD]), one field duplicate soil sample (SB-03-0910-072220 [8595-5-FD]), and one field blank were collected as a part of the sampling quality assurance (QA)/quality control (QC) process. Samples were submitted to EPA Region 7 laboratory for VOC analysis as part of ASR 8595. The complete laboratory data package is in Appendix F. QC sampling results are discussed in Section 4.5.

4.0 ANALYTICAL DATA SUMMARY

Soil, air, and groundwater samples were submitted to the EPA Region 7 laboratory for analyses for VOCs. The analytical data packages for ASRs 8537, 8595, 8612, and 8778 are in Appendix F, with the chain-of-custody records. Soil gas samples were analyzed on site by BGS in accordance with Method Toxic Organics (TO)-14. The data package from BGS is in Attachment 1.

4.1 SOIL GAS SAMPLE RESULTS

Soil gas samples were analyzed by a field GC with a 60-meter capillary column and a PID and FID. Soil-gas sampling activities occurred in areas of known groundwater contamination, near residential areas, and at the periphery of previously identified groundwater contamination. Figure 3 shows locations of the soil gas samples collected. Samples were analyzed for TCE, *cis*- and *trans*-1,2-DCE, VC, and toluene. None of these analytes was detected in any sample collected. Detection limits ranged from 7 parts per billion by volume (ppbv) for TCE to 16 ppbv for VC. Attachment 1 contains the results from BGS, as well as the QA/QC Summary Report pertaining to the activity.

4.2 SOIL SAMPLE RESULTS

Soil sample results were compared to EPA Region 7's Removal Management Levels (RML) and Remedial Screening Levels (RSL) in a commercial setting (EPA 2020a, b). Results were also compared to EPA's SCDM benchmarks for cancer and non-cancer risks (EPA 2020c). Table 6 below lists all VOCs detected in the soil samples. The full analytical report for ASR 8595 is in Appendix F.

Tetra Tech START advanced six soil borings along sanitary sewer lines near the former Clinton Engines site. Portions of the sanitary sewer lines reportedly are of clay pipe construction. According to the City, sewer lines are approximately 8 feet bgs. Two soil samples were collected from each boring for laboratory analysis. Locations were selected to determine if the sanitary sewers had received solvent waste from the former facility, and if the waste may have leaked from the clay pipe. The only samples containing site-related compounds were from borings SB-3, SB-4, and SB-6. Borings SB-3 and SB-4 were advanced at the intersection of S. Clark Street and E. Maple Street, northwest of the site. SB-6 was about 245 feet north of the intersection in the 200 block of S. Clark Street. Samples from all three borings contained TCE and *cis*-1,2-DCE. At the approximate depth of the sewer line (8 feet bgs), only boring SB-3 contained TCE and *cis*-1,2-DCE. In the soil sample collected between 8 and 9 feet bgs, TCE was detected at 73 µg/kg, and *cis*-1,2-DCE was reported at 12 µg/kg. A duplicate sample collected at the same depth contained 61 µg/kg TCE and 6.7 µg/kg *cis*-1,2-DCE. No chlorinated solvents were reported

in the soil sample collected within 15 to 16 feet bgs at SB-3. At SB-4 and SB-6, TCE and *cis*-1,2 DCE were found only in the deeper samples collected between 15 and 16 feet bgs. In these deeper samples, TCE was found at significantly higher concentrations—3,000 µg/kg in SB-4 and 610 µg/kg in SB-6. In the deep sample from SB-4, *cis*-1,2-DCE was detected at 180 µg/kg. None of these concentrations exceeded an RML for residential soils.

TABLE 6
VOLATILE ORGANIC COMPOUNDS IN SOIL SAMPLES
TCE-CLINTON ENGINE SITE
MAQUOKETA, IOWA

| Soil Boring Number | Depth (ft bgs) | EPA Sample Number | Acetone | 2-Butanone (MEK) | cis-1,2-DCE | Methyl acetate | TCE |
|----------------------|----------------|-------------------|---|------------------|-------------|----------------|--------|
| | | | Concentration (micrograms per kilogram [µg/kg]) | | | | |
| EPA RML (Resident) | | | 6.1E+7 | 2.7E+7 | 1.6E+5 | 7.8E+7 | 4,100 |
| EPA RML (Worker) | | | 6.7E+8 | 1.9E+8 | 2.3E+6 | 1.2E+9 | 19,000 |
| SCDM Cancer Risk | | | NE | NE | NE | NE | 8,810 |
| SCDM Non-Cancer Risk | | | 7.04E+7 | 4.69E+7 | 1.56E+5 | NE | 39,100 |
| SB-01 | 9-10 | 8595-1 | 62 J | 11 U | 5.6 U | 14 | 5.6 U |
| | 15-16 | 8595-2 | 32 J | 14 U | 7.1 U | 17 | 7.1 U |
| SB-02 | 9-10 | 8595-3 | 28 | 13 U | 6.4 U | 11 | 6.4 U |
| | 15-16 | 8595-4 | 18 | 11 U | 5.3 U | 5.3 U | 5.3 U |
| SB-03 | 9-10 | 8595-5 | 58 J | 13 U | 31 | 12 | 73 |
| | 9-10 | 8595-5-FD | 41 J | 13 U | 23 | 6.7 | 61 |
| | 15-16 | 8595-7 | 70 J | 15 J | 5.8 U | 5.8 | 5.8 U |
| SB-04 | 9-10 | 8595-8 | 35 | 12 U | 5.9 U | 5.9 U | 5.9 U |
| | 15-16 | 8595-9 | 29 | 14 U | 180 | 6.9 U | 3,000 |
| SB-05 | 9-10 | 8595-10 | 18 | 6.5 U | 3.3 U | 3.3 U | 3.3 U |
| | 15-16 | 8595-11 | 26 | 12 U | 5.9 U | 5.9 U | 5.9 U |
| SB-06 | 8-9 | 8595-12 | 9.9 | 9.9 U | 5.0 U | 5.0 U | 5.0 U |
| | 15-16 | 8595-13 | 9.3 U | 9.3 U | 13 | 4.7 U | 610 |

Notes:

EPA Removal Management Levels (RML) are based on a cancer risk of 1E-04 and a hazard quotient of 1.

EPA U.S. Environmental Protection Agency
DCE Dichloroethene
FD Field Duplicate
ft bgs Feet below ground surface
J Identification of the analyte is acceptable; the reported value is an estimate.
MEK Methyl ethyl ketone

NE Not established
SB Soil Boring
SCDM Superfund Chemical Data Matrix
TCE Trichloroethene
U Analyte not detected at concentration at or above reporting limit indicated at immediate left.

Other VOCs detected in soil samples include acetone, 2-butanone, and methyl acetate. Acetone and 2-butanone are common laboratory contaminants. All acetone and 2-butanone detections in soil samples were at minimal levels, well below EPA's SCDM benchmarks, as well as EPA Regional RMLs and RSLs for residential soil. Methyl acetate was detected sporadically in six samples at concentrations at or below 17 µg/kg, far below RMLs. It is a low toxicity solvent commonly found in glues and nail polish remover.

4.3 GROUNDWATER SAMPLE RESULTS

Five domestic wells and three municipal wells were sampled and analyzed for the full suite of VOCs in July 2020 under ASR 8595. Other than acetone, reported in all well samples at concentrations ranging from 13 to 17 µg/L, no other VOC was detected in any sample. Notably, acetone was also detected in the field blank sample at 18 µg/L. Acetone in the samples is not thought to be site related; rather, it may be a laboratory artifact. The complete analytical report is in Appendix F.

4.4 VAPOR INTRUSION SAMPLE RESULTS

VI sample analytical results were compared to EPA's regional VI RMLs in residential and commercial settings (EPA 2020a). Results were also compared to EPA's SCDM Benchmarks for Cancer/Non-Cancer Risks (EPA 2020c).

4.4.1 Sub-Slab Vapor Sample Results

Sub-slab vapor samples were collected at 22 locations—18 residential and four commercial properties. Access to install sub-slab vapor ports was not granted at six locations where indoor air was sampled. Table 7 lists site-related analytes and results reported. During the first sampling round in June 2020, VI samples were analyzed only for TCE. In July 2020 and February 2021, VI analytes were expanded to include TCE, *cis*- and *trans*-1,2-DCE, VC, and toluene. This expanded list included VOCs commonly detected in groundwater at the site.

TABLE 7

**VOLATILE ORGANIC COMPOUNDS IN SUB-SLAB VAPOR SAMPLES
TCE-CLINTON ENGINE SITE
MAQUOKETA, IOWA**

| EPA Sample Number | Address and Type of Property | Location | TCE | cis-1,2-DCE | trans-1,2-DCE | VC | Toluene |
|----------------------------|-------------------------------|-------------------------------------|-----------------------|-------------|---------------|---------|---------|
| | | | Concentration (µg/m³) | | | | |
| EPA RML (Resident) | | | 67 | NE | NE | 560 | NE |
| EPA RML (Worker) | | | 200 | NE | NE | 9,300 | NE |
| June 2020 Sample Locations | | | | | | | |
| 8537-16 | █ S. Clark St. Residential | Basement, back left corner | 1.4 U | NA | NA | NA | NA |
| 8537-17 | █ S. Matteson St. Residential | Basement, left room by dryer | 1.4 U | NA | NA | NA | NA |
| 8537-18 | █ S. Matteson St. Residential | Basement, main room far wall | 1.4 U | NA | NA | NA | NA |
| 8537-19 | █ E. Maple St. Residential | Basement, center of right wall | 1.4 U | NA | NA | NA | NA |
| 8537-20 | █ S. Matteson St. Residential | Basement, center between rooms | 1.4 U | NA | NA | NA | NA |
| 8537-21 | █ S. Otto St. Residential | Basement, center of far wall | 1.4 U | NA | NA | NA | NA |
| 8537-22 | █ E. Platt St. Residential | Basement, back right corner | 1.4 U | NA | NA | NA | NA |
| 8537-23 | █ S. Matteson St. Residential | Basement, back right corner (dryer) | 1.4 U | NA | NA | NA | NA |
| 8537-24 | █ S. Matteson St. Residential | Basement, by stairs under rug | 1.4 U | NA | NA | NA | NA |
| 8537-25 | █ S. Matteson St. Residential | Basement, right side back corner | 3.1 | NA | NA | NA | NA |
| July 2020 Sample Locations | | | | | | | |
| 8612-16 | █ N. Dearborn St. Residential | Basement Port | 0.14 U | 0.20 U | 0.20 U | 0.13 UJ | 0.76 U |
| 8612-17 | █ E. Platt St. Commercial | Basement Port | 0.14 U | 0.20 U | 0.20 U | 0.13 UJ | 2.9 |
| 8612-18 | █ E. Maple St. Commercial | West Shop Port | 0.14 U | 0.20 U | 0.20 U | 0.13 UJ | 7.0 |
| 8612-19 | █ E. Maple St. Commercial | Furnace Closet Port | 0.32 | 0.20 U | 0.20 U | 0.13 UJ | 0.94 |
| 8612-20 | █ S. Matteson St. Residential | Basement Port | 0.14 U | 0.20 U | 0.20 U | 0.13 UJ | 0.76 U |
| 8612-21 | █ S. Matteson St. Residential | Basement Port | 0.14 U | 0.20 U | 0.20 U | 0.13 UJ | 0.76 U |
| 8612-22 | █ E. Maple St. Residential | Basement Port | 0.14 U | 0.20 U | 0.20 U | 0.13 UJ | 0.76 U |
| 8612-24 | █ S. Clark St. Residential | Basement Port | 0.14 U | 0.20 U | 0.20 U | 0.13 UJ | 0.76 U |
| 8612-25 | █ E. Platt St. Residential | Basement Port | 0.76 | 0.20 U | 0.20 U | 0.13 UJ | 0.76 U |
| 8612-26 | █ S. Matteson St. Residential | Basement Port (back room) | 0.14 U | 0.20 U | 0.20 U | 0.13 UJ | 0.76 U |

TABLE 7 (Continued)

**VOLATILE ORGANIC COMPOUNDS IN SUB-SLAB VAPOR SAMPLES
TCE-CLINTON ENGINE SITE
MAQUOKETA, IOWA**

| EPA Sample Number | Address and Type of Property | Location | TCE | <i>cis</i> -1,2-DCE | <i>trans</i> -1,2-DCE | VC | Toluene |
|--------------------------------|-------------------------------|----------------------------------|------------------------------------|---------------------|-----------------------|---------|---------|
| | | | Concentration (µg/m ³) | | | | |
| EPA RML (Resident) | | | 67 | NE | NE | 560 | NE |
| EPA RML (Worker) | | | 200 | NE | NE | 9,300 | NE |
| 8612-27 | █ E. Platt St. Residential | Basement Port | 0.14 U | 0.20 U | 0.20 U | 0.13 UJ | 0.76 U |
| 8612-28 | █ E. Maple St. Commercial | Shop Port | 0.14 U | 0.20 U | 0.20 U | 0.13 UJ | 0.76 U |
| February 2021 Sample Locations | | | | | | | |
| 8778-3 | █ E. Maple St. Commercial | West Shop Port | 0.14 U | 0.20 U | 0.20 U | 0.13 U | 16 |
| 8778-5 | █ E. Maple St. Commercial | Furnace Closet Port | 0.14 U | 0.20 U | 0.20 U | 0.13 U | 0.76 U |
| 8778-8 | █ E. Platt St. Residential | Basement | 0.14 U | 0.20 U | 0.20 U | 0.13 U | 0.76 U |
| 8778-11 | █ S. Matteson St. Residential | Basement, right side back corner | 1.0 | 0.20 U | 0.20 U | 0.13 U | 0.76 U |

Notes:

Region 7 VI Removal Management Level (RML) is based on an attenuation factor of 0.03, cancer risk of 1E-04, and a hazard quotient of 1.

DCE Dichloroethene

EPA U.S. Environmental Protection Agency

µg/m³ Micrograms per cubic meter

NA Not analyzed

NE Not established

TCE Trichloroethene

VC Vinyl chloride

U Analyte not detected at concentration at or above reporting limit at immediate left.

UJ Analyte not detected at concentration at or above reporting limit. Reporting limit is an estimate.

In June and July 2020, TCE was detected in three samples (8537-25, 8612-19, and 8612-25) at 3.1, 0.32, and 0.76 µg/m³, respectively. In July 2020, toluene was reported in three sub-slab vapor samples at 2.9, 7.0, and 0.94 µg/m³, respectively. No *cis*- or *trans*-1,2-DCE or VC was reported in any sub-slab vapor sample collected. None of these results exceeded a VI RML screening level. In February 2021, TCE was detected at 1.0 µg/m³ in a sub-slab vapor sample (8778-11) collected at █████ S. Matteson St. TCE had been detected at this location in June 2021 at 3.1 µg/m³. Toluene was reported at 16 µg/m³ in sample 8778-3 collected at █████ E. Maple St. Toluene had been detected at this location in July 2021 at 7.0 µg/m³. Though not a requested analyte, tetrachloroethene (PCE) was noted by the laboratory as present in sub-slab vapor sample 8778-5 collected at █████ E. Maple St., and in sample 7887-8 from █████ E. Platt St. at concentrations of 12.5 and 10.1 µg/m³, respectively. These concentrations are well below the EPA RML of 1,400 µg/m³ for sub-slab soil gas in a residential setting.

4.4.2 Indoor Air and Ambient Air Sample Results

Indoor air samples were collected at 28 locations—23 residential and five commercial properties. Ambient air samples were collected at two residential and one commercial properties. Table 8 lists site-related analytes and results reported. During the first sampling round in June 2020, the only analyte was TCE. Due to high TCE concentrations reported in groundwater samples and relatively high toxicity of TCE, EPA sampled only for this analyte at locations near the facility. A 3-day rush analysis was requested for all samples collected in June 2020. In July 2020, VI samples were analyzed for TCE, *cis*- and *trans*-1,2-DCE, VC, and toluene. This expanded list included VOCs commonly detected in groundwater at the site. Where possible, EPA wanted collections of both indoor air and sub-slab vapor samples at each property. However, several property owners only allowed access to collect the indoor air sample. No sub-slab vapor samples were collected at [REDACTED] E. Maple St., [REDACTED] E. Maple St., [REDACTED] E. Platt St., [REDACTED] E. Platt St., [REDACTED] S. Clark St., and [REDACTED] S. Otto St.

Ambient air samples were collected at [REDACTED] S. Matteson St. and [REDACTED] S. Clark St. in June 2020. Table 8 lists VOCs detected in indoor air and ambient air samples collected at the site.

TCE was detected in indoor air samples at five properties at concentrations ranging from 0.2 to 1.9 $\mu\text{g}/\text{m}^3$. None of the concentrations was above the EPA RML of 2.0 $\mu\text{g}/\text{m}^3$. At two locations (907 E. Platt St. and 802 E. Maple St.), the SCDM TCE cancer risk screening concentration of 0.478 $\mu\text{g}/\text{m}^3$ was exceeded. At two of the locations ([REDACTED] E. Platt St. and [REDACTED] E. Maple St.), no sub-slab vapor samples were collected. At two locations ([REDACTED] N. Dearborn St. and [REDACTED] E. Maple St.), sub-slab vapor samples were collected but no TCE was detected. At one location (802 E. Maple St.), TCE was detected in indoor air (0.64 $\mu\text{g}/\text{m}^3$) and in sub-slab vapor (0.32 $\mu\text{g}/\text{m}^3$).

Either *cis*- or *trans*-1,2-DCE was identified in indoor air samples collected at three properties at concentrations ranging from 0.28 to 0.79 $\mu\text{g}/\text{m}^3$. No RMLs have been established for either compound. Concentrations reported were well below the SCDM *trans*-1,2-DCE non-cancer risk screening concentration of 827 $\mu\text{g}/\text{m}^3$. VC was detected in one indoor air sample at 0.24 $\mu\text{g}/\text{m}^3$ —below the RML of 17 $\mu\text{g}/\text{m}^3$ but above the SCDM VC cancer risk screening concentration of 0.168 $\mu\text{g}/\text{m}^3$. The sample from 104 N. Dearborn St. contained VC at 0.24 $\mu\text{g}/\text{m}^3$; however, the sub-slab vapor sample from this property did not contain VC.

Toluene was identified in 15 of the 16 indoor air samples collected in July 2020 at concentrations ranging from 1.7 to 1,700 (estimated) $\mu\text{g}/\text{m}^3$. All concentrations were below the residential RML of 5,200 $\mu\text{g}/\text{m}^3$ and the SCDM toluene non-cancer risk screening concentration of 5,210 $\mu\text{g}/\text{m}^3$. At 604 E. Maple St., the

property with the highest concentration, toluene was found at 7 µg/m³ in sub-slab vapors. The higher indoor air concentrations of toluene suggest an indoor air source such as fuels or paint thinner.

In the two ambient air samples collected in June 2020 and one ambient air sample collected in February 2021, no TCE or other VOC was found.

TABLE 8
VOLATILE ORGANIC COMPOUNDS IN INDOOR AND AMBIENT AIR SAMPLES
TCE-CLINTON ENGINE SITE
MAQUOKETA, IOWA

| EPA Sample Number | Address and Type of Property | Location | TCE | <i>cis</i> -1,2-DCE | <i>trans</i> -1,2-DCE | VC | Toluene |
|-------------------------------------|-------------------------------|-----------------------------|------------------------------------|---------------------|-----------------------|--------|---------|
| | | | Concentration (µg/m ³) | | | | |
| | | EPA RML (Resident) | 2.0 | NE | NE | 17 | 5,200 |
| | | EPA RML (Worker) | 6 | NE | NE | 280 | 22,000 |
| | | SCDM Cancer Risk | 0.478 | NE | NE | 0.168 | NE |
| | | SCDM Non-Cancer Risk | 2.09 | NE | 827 | 104 | 5,210 |
| June 2020 Sampling Locations | | | | | | | |
| 8537-1 | █ S. Matteson St. Residential | Main Floor, Dining Room | 1.4 U | NA | NA | NA | NA |
| 8537-2 | █ S. Clark St. Residential | Main Floor, Living Room | 1.4 U | NA | NA | NA | NA |
| 8537-3 | █ S. Matteson St. Residential | Main Floor, Dining Room | 1.4 U | NA | NA | NA | NA |
| 8537-5 | █ S. Matteson St. Residential | Main Floor, Kitchen | 1.4 U | NA | NA | NA | NA |
| 8537-7 | █ S. Clark St. Residential | Main Floor, Living Room | 1.4 U | NA | NA | NA | NA |
| 8537-8 | █ E. Maple St. Residential | Main Floor, Main Area | 1.4 U | NA | NA | NA | NA |
| 8537-9 | █ S. Matteson St. Residential | Main Floor, Living Room | 1.4 U | NA | NA | NA | NA |
| 8537-10 | █ S. Matteson St. Residential | Main Floor, Living Room | 1.4 U | NA | NA | NA | NA |
| 8537-11 | █ S. Otto St. Residential | Main Floor, Dining Room | 1.4 U | NA | NA | NA | NA |
| 8537-12 | █ S. Otto St. Residential | Main Floor, Kitchen | 1.4 U | NA | NA | NA | NA |
| 8537-13 | █ E. Platt St. Residential | Main Floor, Kitchen | 1.9 | NA | NA | NA | NA |
| 8537-14 | █ E. Platt St. Residential | Main Floor – Kitchen | 1.4 U | NA | NA | NA | NA |
| 8537-15 | █ S. Matteson St. Residential | Main Floor, Dining Room | 1.4 U | NA | NA | NA | NA |
| July 2020 Sampling Locations | | | | | | | |
| 8612-1 | █ E. Maple St. Residential | Main Floor, Living Room | 0.20 | 0.20 U | 0.51 | 0.13 U | 680 |

TABLE 8 (Continued)

**VOLATILE ORGANIC COMPOUNDS IN INDOOR AND AMBIENT AIR SAMPLES
TCE-CLINTON ENGINE SITE
MAQUOKETA, IOWA**

| EPA Sample Number | Address and Type of Property | Location | TCE | cis-1,2-DCE | trans-1,2-DCE | VC | Toluene |
|----------------------------------|-------------------------------|------------------------------|-----------------------|-------------|---------------|---------|---------|
| | | | Concentration (µg/m³) | | | | |
| EPA RML (Resident) | | | 2.0 | NE | NE | 17 | 5,200 |
| EPA RML (Worker) | | | 6 | NE | NE | 280 | 22,000 |
| SCDM Cancer Risk | | | 0.478 | NE | NE | 0.168 | NE |
| SCDM Non-Cancer Risk | | | 2.09 | NE | 827 | 104 | 5,210 |
| 8612-2 | █ N. Dearborn St. Residential | Main Floor, Living Room | 0.21 | 0.20 U | 0.20 U | 0.24 | 1.7 |
| 8612-3 | █ E. Platt St. Commercial | Auditorium | 0.14 U | 0.20 U | 0.20 U | 0.13 U | 13 |
| 8612-4 | █ E. Maple St. Commercial | Left Building Shop (west) | 0.35 | 0.28 | 0.79 | 0.13 U | 1,700 J |
| 8612-5 | | Right Building Office (east) | 0.14 U | 0.20 U | 0.20 U | 0.13 U | 300 |
| 8612-6 | █ E. Maple St. Commercial | Room with Furnace Closet | 0.64 | 0.33 | 0.20 U | 0.13 U | 14 |
| 8612-7 | █ E. Maple St. Residential | Main Floor, Main Room | 0.14 U | 0.20 U | 0.20 U | 0.13 U | 11 |
| 8612-8 | █ S. Matteson St. Residential | Main Floor, Living Room | 0.14 U | 0.20 U | 0.20 U | 0.13 U | 14 |
| 8612-9 | █ S. Matteson St. Residential | Main Floor, Office Room | 0.14 U | 0.20 U | 0.20 U | 0.13 U | 10 |
| 8612-10 | █ E. Maple St. Residential | Main Floor, Living Room | 0.14 U | 0.20 U | 0.20 U | 0.13 U | 3.8 |
| 8612-11 | █ S. Clark St. Residential | Main Floor – Kitchen | 0.14 U | 0.20 U | 0.20 U | 0.13 U | 2.9 |
| 8612-12 | █ E. Platt St. Commercial | Main Floor, Front Desk | 0.14 U | 0.20 U | 0.20 U | 0.13 U | 6.6 |
| 8612-13 | █ E. Platt St. Residential | Main Floor, Living Room | 0.14 U | 0.20 U | 0.20 U | 0.13 U | 2.2 |
| 8612-14 | █ S. Matteson St. Residential | Main Floor, Living Room | 0.14 U | 0.20 U | 0.20 U | 0.13 U | 3.3 |
| 8612-15 | █ E. Platt St. Residential | Main Floor, Living Room | 0.14 U | 0.20 U | 0.20 U | 0.13 UJ | 0.76 U |
| 8612-23 | █ E. Maple St. Commercial | Main Office Area | 0.14 U | 0.20 U | 0.20 U | 0.13 UJ | 34 |
| February 2021 Sampling Locations | | | | | | | |
| 8778-1 | █ E. Platt St. Residential | Main Floor, Living Room | 0.14 U | 0.20 U | 0.20 U | 0.13 U | 2.9 |
| 8778-2 | █ E Maple St. Commercial | Left Building Shop (west) | 0.14 U | 0.20 U | 0.46 | 0.13 U | 460 |
| 8778-4 | █ E. Maple St. Commercial | Room with Furnace Closet | 0.14 U | 0.20 U | 0.20 U | 0.13 U | 5.5 |
| 8778-6 | █ N. Dearborn St. Residential | Main Floor, Living Room | 0.14 U | 0.20 U | 0.20 U | 0.13 U | 2.2 |

TABLE 8 (Continued)

**VOLATILE ORGANIC COMPOUNDS IN INDOOR AND AMBIENT AIR SAMPLES
TCE-CLINTON ENGINE SITE
MAQUOKETA, IOWA**

| EPA Sample Number | Address and Type of Property | Location | TCE | <i>cis</i> -1,2-DCE | <i>trans</i> -1,2-DCE | VC | Toluene |
|---|----------------------------------|-------------------------|------------------------------------|---------------------|-----------------------|--------|---------|
| | | | Concentration (µg/m ³) | | | | |
| | | EPA RML (Resident) | 2.0 | NE | NE | 17 | 5,200 |
| | | EPA RML (Worker) | 6 | NE | NE | 280 | 22,000 |
| | | SCDM Cancer Risk | 0.478 | NE | NE | 0.168 | NE |
| | | SCDM Non-Cancer Risk | 2.09 | NE | 827 | 104 | 5,210 |
| 8778-7 | █ E. Platt St. Residential | Main Floor, Kitchen | 0.38 | 0.20 U | 0.20 U | 0.13 U | 8.8 |
| 8778-9 | █ E. Maple St. Residential | Main Floor, Living Room | 0.38 | 0.20 U | 0.20 U | 0.13 U | 220 |
| 8778-10 | █ S. Matteson St. Residential | Main Floor, Dining Room | 0.14 U | 0.20 U | 0.20 U | 0.13 U | 0.76 U |
| Ambient Air June 2020 and February 2021 | | | | | | | |
| 8537-4 | █ S. Matteson St. Residential | Backdoor Steps | 0.14 U | NA | NA | NA | NA |
| 8537-6 | █ S. Clark St. Residential | Backdoor Steps | 0.14 U | NA | NA | NA | NA |
| 8778-12 | █ E Maple St. Commercial | Museum Parking Lot | 0.14 U | 0.20 U | 0.20 U | 0.13 U | 0.76 U |

Notes:

EPA Removal Management Levels (RML) are based on a cancer risk of 1E-04 and a hazard quotient of 1.

Bolded value indicates exceedance of an SCDM benchmark value.

DCE Dichloroethene

NE None established

EPA U.S. Environmental Protection Agency

SCDM Superfund Chemical Data Matrix

J Identification of analyte is acceptable; reported value is an estimate.

TCE Trichloroethene

µg/m³ Micrograms per cubic meter

VC Vinyl chloride

NA Not analyzed

U Analyte not detected at concentration at or above reporting limit at immediate left.

In February 2021, addresses where TCE previously had been detected in sub-slab vapor or indoor air were sampled again to identify any seasonal variation in detected concentrations. Samples were collected at five residential and two commercial properties, and were analyzed for TCE, *cis*- and *trans*-1,2-DCE, VC, and toluene. The intent was to collect indoor air and sub-slab vapor samples at each property. However, sub-slab vapor sampling did not occur at three properties. At █ E. Platt St. and █ N. Dearborn St., no sub-slab vapor samples were collected because ports were rusted due to wet basements. At █ E. Maple St., a sub-slab vapor sample was not collected because no port had been installed in 2020.

Indoor air sampling yielded TCE at 0.38 $\mu\text{g}/\text{m}^3$ in two residence (■■■■ E. Platt St. and ■■■■ E. Maple St.)—below the residential RML (2 $\mu\text{g}/\text{m}^3$) and SCDM cancer risk (0.478 $\mu\text{g}/\text{m}^3$). Previous results had been 1.9 $\mu\text{g}/\text{m}^3$ at ■■■■ E. Platt St. and 0.2 $\mu\text{g}/\text{m}^3$ at ■■■■ E. Maple St. In a commercial building at ■■■■ Maple St., *trans*-1,2-DCE was detected at 0.46 $\mu\text{g}/\text{m}^3$ —well below the Commercial RML and SCDM non-cancer risk screening concentration. Toluene was detected in six of the seven indoor air samples at concentrations ranging from 2.2 to 460 $\mu\text{g}/\text{m}^3$. All detected concentrations of toluene were well below the residential RML and SCDM non-cancer screening level. Though not requested as an analyte, PCE (at 13.5 $\mu\text{g}/\text{m}^3$) was noted by the laboratory as present in indoor air sample 8778-4 collected at 802 E. Maple St. This concentration was below the EPA RML of 180 $\mu\text{g}/\text{m}^3$ for indoor air in a commercial building.

4.5 QA/QC SAMPLE RESULTS

The common laboratory contaminant acetone was reported in the field blank (8595-110-FB) at 18 $\mu\text{g}/\text{L}$. One original-duplicate soil sample pair and one original-duplicate groundwater sample pair were collected in July 2020. Regarding the original-duplicate soil sample pair, relative percent differences (RPD) were calculated for results for the four analytes detected. An RPD of 34.3% was calculated for acetone results, an RPD of 29.6% was calculated for *cis*-1,2-DCE results, an RPD of 56.7% was calculated for methyl acetate results, and an RPD of 17.9% was calculated for TCE results. Regarding the groundwater original-duplicate pair, only acetone was reported in both samples. An RPD of 14.3% was calculated for those acetone results.

5.0 PATHWAY AND ENVIRONMENTAL HAZARD ASSESSMENT

The following sections describe Hazard Ranking System (HRS) pathways and targets pertaining to the site.

5.1 GROUNDWATER MIGRATION PATHWAY

The groundwater migration pathway was evaluated by determining proximities of contamination to domestic and municipal water wells in the area, and likelihoods of impacts by contaminants on those wells. Previous investigations have characterized releases to the loess and glacial till overlying bedrock. Past sampling from MWs installed on site and from more than 50 DPT-installed temporary wells on site and off site has detected the following hazardous constituents at the indicated maximum concentrations:

| | |
|-------------------------|--------------|
| • TCE | 9,580 µg/L |
| • <i>cis</i> -1,2-DCE | 7,190 µg/L |
| • <i>trans</i> -1,2-DCE | 1,044 µg/L |
| • 1,1,2-TCA | 132 µg/L |
| • VC | 319 µg/L |
| • Benzene | 18.3 µg/L |
| • Toluene | 247,000 µg/L |

Contaminants have been reported at depths as shallow as 6-10 feet bgs and as deep as 75-79 feet bgs. The approximate area of the plume is 89 acres and it appears to be oriented southwest to northeast. TCE was detected at 255 µg/L 2,500 feet northeast of the site, but was not detected at a location 2,200 feet farther east or 650 feet north. Figure 4 in Appendix A shows the approximate extent of the plume based on sampling results from 2013 to 2019.

Figure 5 shows drinking water wells within a 4-mile radius of the site. According to Iowa water well records, the domestic water well nearest to the site is approximately 4,900 feet to the east. Most domestic wells near Maquoketa obtain water from the Silurian bedrock, which underlies loess and glacial till. Domestic well depths average 168 feet. Within 4 miles of the site, 251 domestic wells are registered with the State of Iowa. The municipal wells for the City of Maquoketa draw from a separate deeper aquifer known as the Cambrian-Ordovician aquifer. The Ordovician-aged Maquoketa Formation (mainly shale) is encountered within 245-270 feet bgs. The Maquoketa and underlying Ordovician rocks act as a local confining layer, protecting Maquoketa's water source—the St. Peter Sandstone and the Mt. Simon Sandstone. The City of Maquoketa's public water supply is supplied by three municipal wells, all drawing from the deeper aquifer and completed at depths ranging from 1,315 to 2,325 feet bgs. The system provides water to approximately 6,100 people. The City does maintain one additional well

that is much shallower (90 feet bgs) and screened in a buried sand and gravel aquifer on the south side of the Maquoketa River. This well is not connected to the water distribution system and is maintained for fire suppression.

During this ISA, START collected samples from all three active municipal wells and from five domestic wells to determine if the wells had been impacted by the shallow groundwater plume. Samples were analyzed for the full suite of VOCs under ASR 8595. Other than the common laboratory contaminant acetone, none of the wells sampled contained reportable concentrations of any VOC.

5.2 SOIL AND SUBSURFACE INTRUSION EXPOSURE PATHWAY

Discussions of the soil exposure component and the subsurface intrusion component appear in the following sections:

5.2.1 Soil Exposure Component

The focus of the ISA involved off-site sampling only because of the site's enrollment in the Iowa LRP. No surface soil samples (less than 2 feet) were collected to characterize exposure to nearby population. Unknown is whether surface contamination is present on the site. Characterization of on-site sources of contamination did not occur. The only soil sampling by START involved characterization of potential off-site releases of contaminants from sanitary sewer lines. Deep soil samples (8 to 9 feet bgs) were collected near sanitary sewer lines to determine if the line might serve as a contaminant migration pathway from the former facility. Potential nearby targets include the population associated with residential homes directly west of the site. Within 0.5 mile of the site are an estimated 1,518 residents. Between 0.5 and 1 mile of the site are an additional 3,120 people. No surface soil contamination is thought to have migrated from the site, and no contamination has been documented on a residential property. Therefore, the soil exposure component does not appear to pose a significant threat to public health.

5.2.2 Subsurface Intrusion Component

The subsurface intrusion pathway poses risk from contamination within areas where people live, work, or attend school. The site is in the southeast part of the City. North of the site, land use is commercial/light industrial, with residential homes beyond. Northeast and east of the site, land use is a mix of agricultural, light industrial, and residential. South of the site, land use is primarily agricultural. West of the site, land use is mainly single-family residential. Most residents northeast and east of the site live in mobile homes. Nearby residential targets west of the site were the impetus for this assessment due to concerns that the

high concentrations of TCE in groundwater may result in vapors concentrating under those homes and possibly entering the residences by VI. TCE VI has been shown to be impacting the on-site museum.

During the two rounds of indoor air and sub-slab vapor sampling, 17 homes west and northwest of the site were sampled. None of the homes contained TCE in indoor air, and only one home (at [REDACTED] S. Matteson St.) contained 3.1 $\mu\text{g}/\text{m}^3$ TCE in sub-slab vapor. Eleven other residences and businesses sampled north, northeast, or east of the site were above or near the known area of groundwater contamination. Of these, only one at [REDACTED] E. Maple St. contained TCE in both sub-slab vapor (0.32 $\mu\text{g}/\text{m}^3$) and indoor air (0.64 $\mu\text{g}/\text{m}^3$). The building with highest TCE indoor air concentration of 1.9 $\mu\text{g}/\text{m}^3$ at 907 E. Platt St. had a sub-slab port installed, but the port was not sampled in June 2020 because of water in the basement. Residential properties sampled near this property included [REDACTED] E. Platt St. and [REDACTED] E. Platt St. No TCE was found in sub-slab or indoor air at [REDACTED] E. Platt St., and at [REDACTED] E. Platt St., TCE was reported at 0.76 $\mu\text{g}/\text{m}^3$ in sub-slab vapor and was not detected in indoor air.

When resampled in February 2021, two residences (907 E. Platt St. and 803 E. Maple St.) contained TCE in indoor air at 0.38 $\mu\text{g}/\text{m}^3$. This concentration was below the residential RML (2 $\mu\text{g}/\text{m}^3$) and SCDM cancer risk (0.478 $\mu\text{g}/\text{m}^3$). Previous results had been 1.9 $\mu\text{g}/\text{m}^3$ at 907 E. Platt St. and 0.2 $\mu\text{g}/\text{m}^3$ at [REDACTED] E. Maple St. In a commercial building at [REDACTED] E. Maple St., *trans*-1,2-DCE was detected at 0.46 $\mu\text{g}/\text{m}^3$ —well below the Commercial RML and SCDM non-cancer risk screening concentration. Toluene was detected in six of the seven indoor air samples collected at concentrations ranging from 2.2 to 460 $\mu\text{g}/\text{m}^3$. All detected concentrations of toluene were well below the residential RML and SCDM non-cancer screening level. Though not requested as an analyte, PCE (at 13.5 $\mu\text{g}/\text{m}^3$) was noted by the laboratory in indoor air sample 8778-4 collected at [REDACTED] E. Maple St. This concentration was below the EPA RML of 180 $\mu\text{g}/\text{m}^3$ for indoor air in a commercial building.

5.3 OTHER MIGRATION PATHWAYS

Surface water and air migration pathways were not evaluated, and no samples of these media were collected because no indication of contamination along surface water or air pathways had been reported at the site.

6.0 EMERGENCY RESPONSE AND REMOVAL ACTION CONSIDERATIONS

The National Contingency Plan [40 *Code of Federal Regulations* [CFR] 300.415(b) (2)] authorizes EPA to consider emergency response actions at facilities that pose an imminent threat to human health or the environment. TCE, DCE, VC, and toluene were identified in groundwater during site characterization activities at the site, and in off-site groundwater. Due to elevated chlorinated solvent concentrations in groundwater, IDNR required vapor sampling in a former on-site office building that had been converted to a museum. Sub-slab samples collected at the museum in April, July, and October 2014, and in January 2015 yielded TCE concentrations as high as 930 µg/m³. Follow-up indoor air sampling at the museum documented indoor air exceedances above levels considered safe. Because of concern that the off-site groundwater contamination may be impacting nearby residential and commercial properties, IDNR requested federal assistance in a letter dated February 17, 2020. A residential neighborhood borders the site to the west, with mixed commercial/residential properties to the north and northeast. Most of the areas receive drinking water from the City of Maquoketa; however, several domestic wells are northeast and east (downgradient) outside city limits. Vapors from the contaminated groundwater plume could invade overlying structures and present an inhalation risk to occupants. In 2020 and 2021, EPA collected indoor air and sub-slab vapor samples at 28 nearby residential and commercial properties, 12 soil-gas samples at off-site locations near the former facility, 13 subsurface soil samples near a sanitary sewer line that served the site, and groundwater samples from five domestic and three municipal wells.

Based on soil, shallow soil gas, sub-slab vapor, and indoor air data obtained during the ISA, no VI threats associated with a previously identified release of chlorinated solvents have been identified off-site that warrant installation of vapor mitigation systems. Moreover, the off-site domestic and municipal wells sampled contained no site-related contaminants.

No other conditions are known that warrant consideration of emergency response or removal action. A Superfund Removal Site Evaluation and Removal Preliminary Assessment form is included as Appendix G.

7.0 SUMMARY

The 10.52-acre site is at 605 East Maple Street at the southeast corner of East Maple Street and South Clark Street in Maquoketa, Jackson County, Iowa. The site is within a mixed-use area consisting of residential, agricultural, and commercial land. Surrounding the site to the north is commercial property, to the east is commercial and agricultural land, to the south is agricultural land, and to the west is single-family residential housing. The Clinton Engines Museum building is on the northwestern portion of the former manufacturing facility. The site had been utilized for industrial purposes since approximately 1945. Clinton Engines acquired the property in 1950 from The Maquoketa Company. Both companies used the site for production of small engines. The former facility included a foundry, machine shops, metal casting, and painting operations. Clinton Engines officially closed in 1999, and the property was donated to the City in 2000.

On March 23, 2005, the Contaminated Sites Section of IDNR received a Phase I/II Environmental Site Assessment report regarding the site dated October 15, 1999. An ISS completed on June 2, 2005, specified requirement for additional investigation. The site was enrolled in the voluntary LRP in April 2008. Since that time, further site assessment has been sporadic and has focused primarily on delineating extents of on-site and off-site groundwater contamination and on-site VI. High concentrations of chlorinated solvents and toluene have been reported in groundwater at the following maximum concentrations:

| | |
|-------------------------|--------------|
| • TCE | 9,580 µg/L |
| • <i>cis</i> -1,2-DCE) | 7,190 µg/L |
| • <i>trans</i> -1,2-DCE | 1,044 µg/L |
| • 1,1,2-TCA) | 132 µg/L |
| • VC | 319 µg/L |
| • Toluene | 247,000 µg/L |

These maximum concentrations were reported in on-site MWs or off-site temporary wells as far as 900 feet from the site.

Due to elevated chlorinated solvent concentrations in groundwater, IDNR required vapor sampling at a former on-site office building that had been converted to a museum. Sub-slab vapor samples collected at the museum in April, July, and October 2014, and in January 2015 yielded TCE concentrations as high as 930 µg/m³. On-site contamination is being address by the Iowa LRP. Follow-up indoor air sampling at the museum documented indoor air exceedances above levels considered safe. Due to concern that the off-site groundwater contamination could be impacting nearby residential and commercial properties, IDNR requested federal assistance in a letter dated February 17, 2020. The State requested assistance

related to VI sampling at properties in proximity to known groundwater contamination to determine if receptors had been impacted by solvent releases from the facility.

In June and July 2020, START collected indoor air samples at 28 locations—23 residential and five commercial properties. Ambient air samples were collected at two residential properties. Sampling focused on residential areas west of the site and on structures above or near known groundwater contamination. In July 2020, START also collected soil-gas samples at 12 locations, subsurface soil samples at six locations near a sanitary sewer line leading from the site, and domestic and municipal well samples from eight wells. All samples but the soil-gas samples were submitted to the EPA Region 7 laboratory for VOCs analysis. Soil-gas samples were analyzed on site. In June 2020, air samples were analyzed for TCE only, with quick turnaround times to quickly assess the magnitude of risk to nearby residents. Air samples collected in July were analyzed for TCE plus *cis*- and *trans*-1,2-DCE, VC, and toluene. The analytes added had also been detected at high concentrations in groundwater. Soil samples and groundwater samples from drinking water wells were analyzed for the full suite of VOCs.

Results from the initial round of air sampling in June 2020 indicated very little TCE in the 25 sub-slab vapor, indoor air, and ambient air samples collected. TCE was found in one sub-slab sample ($3.1 \mu\text{g}/\text{m}^3$), and one indoor air sample ($1.9 \mu\text{g}/\text{m}^3$). Both detections were below EPA RMLs. Subsequent sub-slab vapor and indoor air sampling at 15 new properties in July 2020 yielded similar low concentrations. TCE was identified in two sub-slab vapor samples at maximum concentration of $0.76 \mu\text{g}/\text{m}^3$, and in four indoor air samples at maximum concentration of $0.64 \mu\text{g}/\text{m}^3$. No *cis*- or *trans*-1,2-DCE or VC was detected in any sub-slab vapor sample. These compounds were found at low concentrations in four indoor air samples. Toluene was detected in three sub-slab vapor samples at maximum concentration of $7.0 \mu\text{g}/\text{m}^3$. Higher toluene results (up to $1,700 \mu\text{g}/\text{m}^3$), and more frequent detections (15 of 16 samples) were reported in indoor air samples, suggesting an indoor source such as fuel or other product stored or used in the home or business.

In February 2021, seven properties where TCE had been detected in either a sub-slab vapor or indoor air sample in June or July were resampled to identify any seasonal variations in TCE concentrations. In February 2021, TCE was detected at $1.0 \mu\text{g}/\text{m}^3$ in a sub-slab vapor sample (8778-11) collected at 219 S. Matteson St. TCE had been detected at this location in June 2021 at $3.1 \mu\text{g}/\text{m}^3$. Toluene was reported at $16 \mu\text{g}/\text{m}^3$ in sub-slab sample 8778-3 collected at [REDACTED] E. Maple St. Toluene had been detected at this location in July 2021 at $7.0 \mu\text{g}/\text{m}^3$. Indoor air sampling indicated TCE at $0.38 \mu\text{g}/\text{m}^3$ at two residences ([REDACTED] E. Platt St. and [REDACTED] E. Maple St.). This concentration was below the residential RML ($2 \mu\text{g}/\text{m}^3$) and SCDM cancer risk ($0.478 \mu\text{g}/\text{m}^3$). Previous results had been $1.9 \mu\text{g}/\text{m}^3$ at [REDACTED] E. Platt St.

and 0.2 µg/m³ at [REDACTED] E. Maple St. In a commercial building at [REDACTED] E. Maple St., *trans*-1,2-DCE was detected at 0.46 µg/m³—well below the Commercial RML and SCDM non-cancer risk screening concentration. Toluene was detected in six of the seven indoor air samples at concentrations ranging from 2.2 to 460 µg/m³. All detected concentrations of toluene were well below the residential RML and SCDM non-cancer screening level.

In the 12 soil gas samples collected off-site and analyzed in the field via mobile laboratory for TCE, *cis*- and *trans*-1,2-DCE, VC, and toluene, none of these compounds were detected. These results suggest that vapor migration from the groundwater plume to shallow soils may not pose a significant threat off site.

Soil sampling near the sewer line north and west of the site yielded detections of TCE and *cis*-1,2-DCE at three locations north of the site. Highest TCE concentrations were detected in the samples collected within 15 to 16 feet bgs at SB-04 and SB-06. In the samples collected within 9 to 10 feet bgs at these two locations, the contaminants were not detected. This suggests the sewer line was not leaking at these locations; rather, the contamination at depth may have resulted from water table fluctuations. At soil boring SB-03, TCE at 73 µg/kg and *cis*-1,2-DCE at 31 µg/kg were detected in the sample collected within 9 to 10 feet bgs. This contamination may have resulted from leaks in the sewer line.

Finally, in samples collected from five downgradient domestic wells and three municipal wells, no VOCs other than the common laboratory contaminant acetone were reported. Previously documented high levels of solvents in groundwater in the unconsolidated loess and glacial till does not appear to have impacted these wells drawing from the Silurian or Cambrian/Ordovician aquifers.

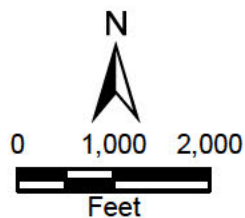
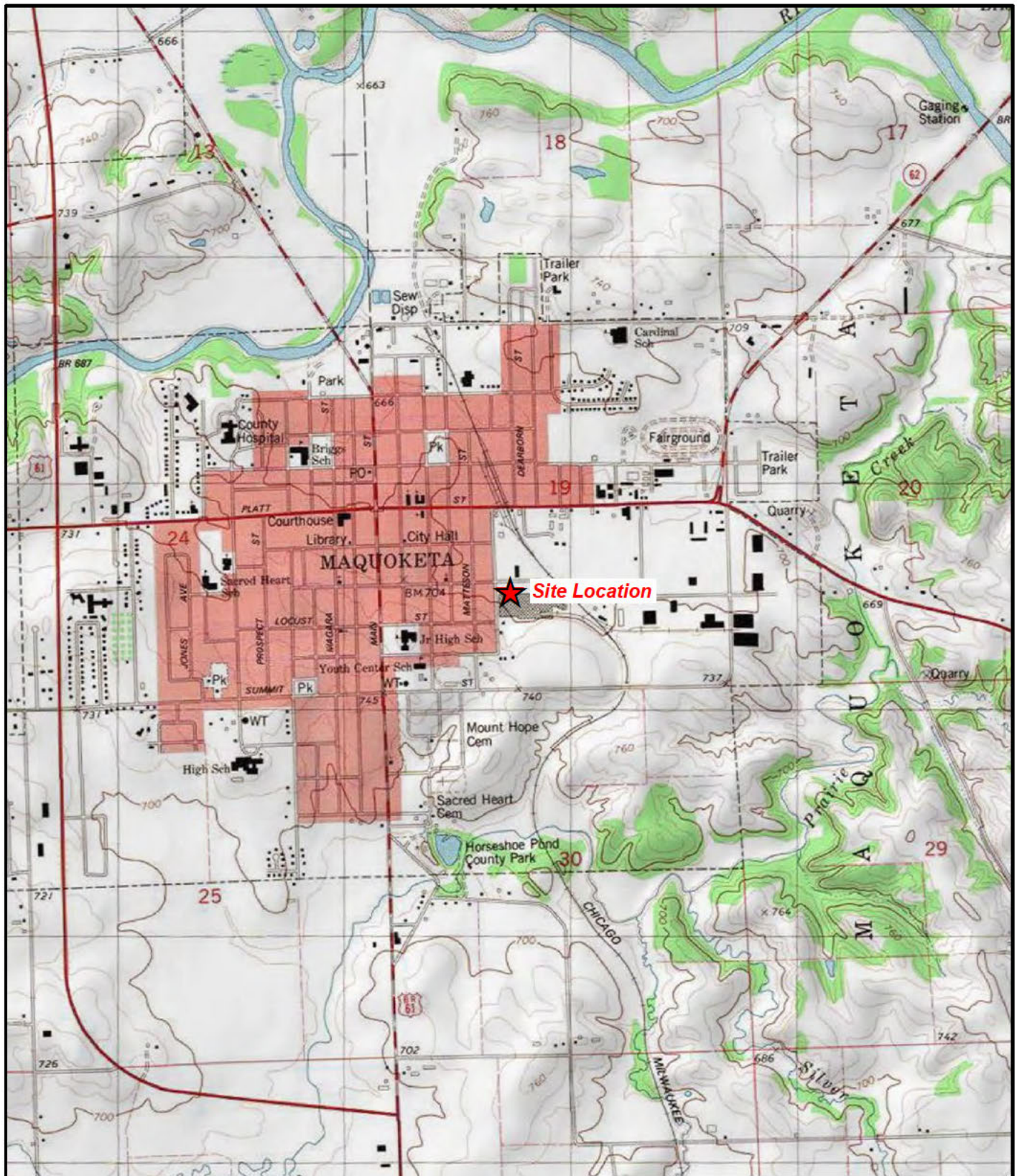
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APPENDIX A

FIGURES



TCE Clinton Engines
Maquoketa, Iowa

Figure 1
Site Location Map



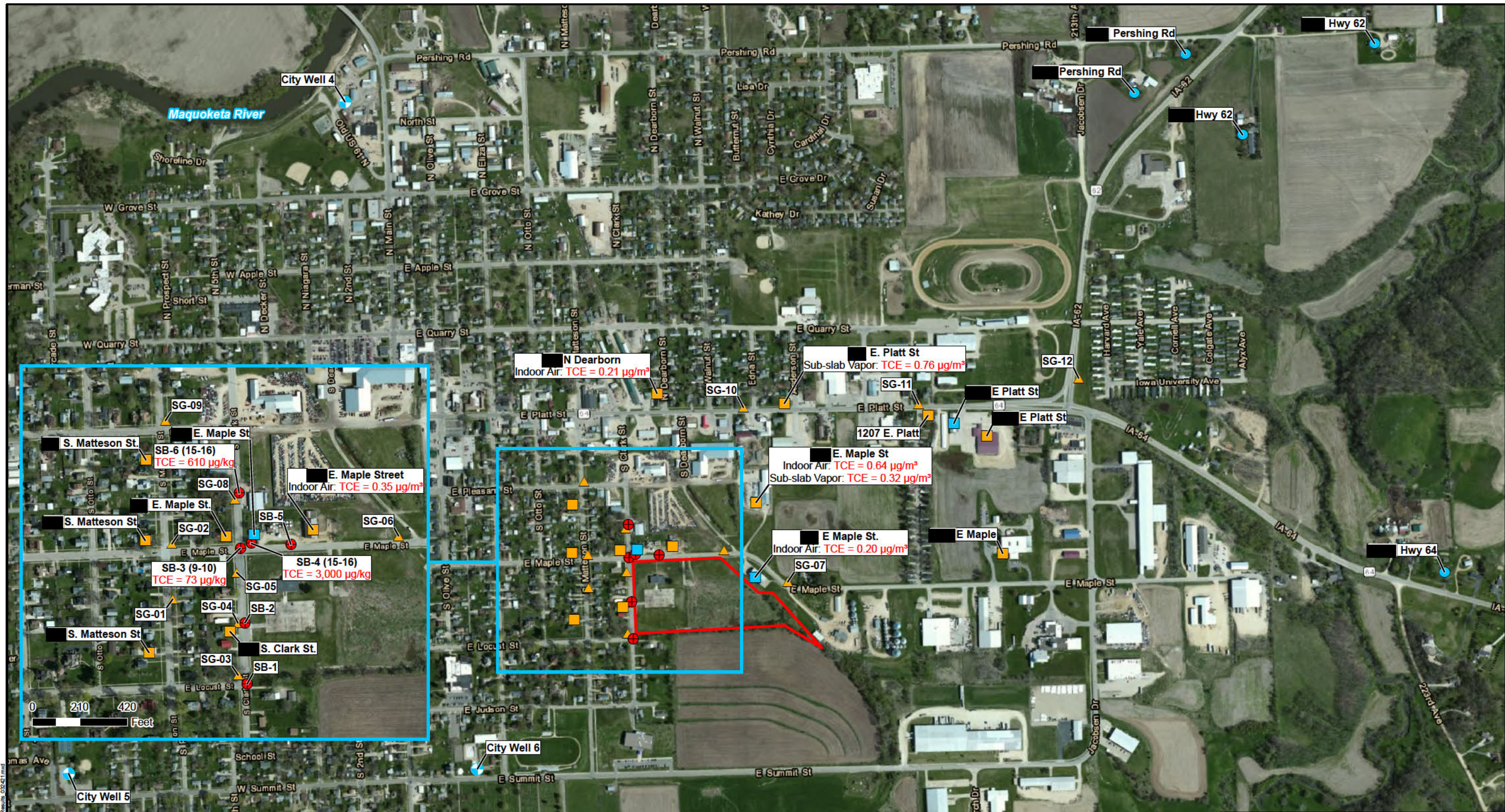
Source: Jefferson West, Iowa USGS 7.5 Minute Topo Quad, 1986;
Jefferson East, Iowa USGS 7.5 Minute Topo Quad, 1986.

Date: 6/15/2020

Drawn By: Rose Mickle

Project No: X903019F0086.004

X:\903019\0086\004\Project\mxd\Figure1.mxd



Legend

●

DPT soil sample location

■

Indoor air sample location

■

Indoor air/sub-slab vapor sample location

●

Municipal well sample location

●

Private well sample location

▲

Soil gas sample location

□

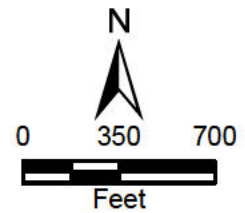
Approximate site boundary

TCE Trichloroethene

µg/kg Micrograms per kilogram

µg/m³ Micrograms per cubic meter

Note: Results are only shown for locations that had detectable TCE results.

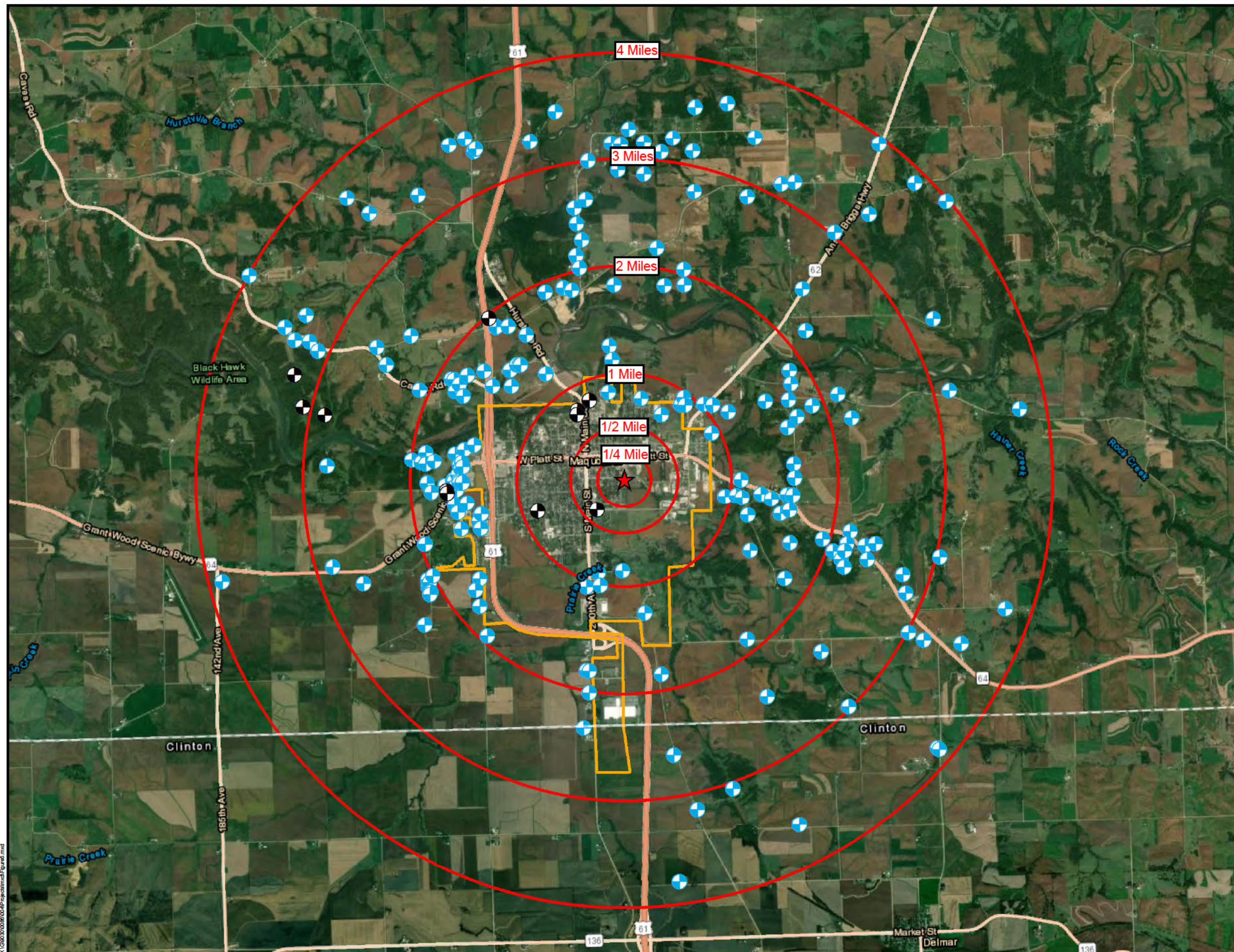


TCE Clinton Engines
Maquoketa, Iowa

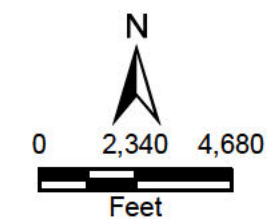
Figure 3
July 2020 TCE Sample Results

TETRA TECH

Date: 4/5/2021 Drawn By: Nick Wiederholt Project No: X903019F0086.004



- Legend
- ★ Clinton Engines location
 - ⊕ Domestic well location
 - ⊗ Public water supply well location
 - ⬡ City boundary
 - Radius ring



Source: Esri, ArcGIS Online, World Imagery, 2013 and 2018.

TCE Clinton Engines
Maquoketa, Iowa

Figure 5
4-Mile Radius Well Map



APPENDIX B

LOGBOOK

KS1810

TCE Clinton Engines Site



Rite in the Rain

ALL-WEATHER

LEVEL

No 311FX

103X953019F0086.004

2 6/1/20 TCE Clinton Engines

- 0800 STMs Barbeau and Gatz at
Tt Kansas City. Gather supplies for
field work.
- 0845 Leave office for TCE Clinton Engines
site.
- 1500 Arrive at hotel. Take break from
site.
- 1745 Leave for site.
- 1828 At [REDACTED] S Matteson to install sub-slab
port and begin indoor air sample.
8537-1 Indoor air - Main area.
Canister ID: 4571 Reg ID: 51
Start: -30" Hg @ 1905 End: 0" Hg @ 1754
- 2008 End work for day. 6/2/20

TB 6/1/20
TB
6/1/20

6/2/20 TCE Clinton Engines

- 0830 Meet with EPA in Maquoketa, Health
and Safety tailgate.
- 0900 At [REDACTED] S Clark to install sub-slab
port & start air sample.
8537-2 Indoor air; NW corner
Canister ID: 30369 Reg: 58 6/3/20
Start: -27.5" Hg @ 0934 End: -5" Hg @ 0820
- 0948 At [REDACTED] S Matteson St to install
sub-slab port & start air sample.
8537-3 Indoor Air; Main area
Canister ID: L5205 Reg ID: 48
Start: -29.5" Hg @ 1016 End: -5" @ 0920
- 1040 At [REDACTED] S Matteson to set up
ambient air: 8537-4 TB E side of house
Canister ID: R2226 Reg ID: 47
Start: -30" Hg @ 1043 End: -3" Hg @ 0956
- 1115 At [REDACTED] S Matteson St to install
sub-slab port & indoor air sample.
8537-5 Indoor air; TB kitchen
Canister ID: R0498 Reg ID: 46
Start: -29.5" Hg @ 1142 End: -3" Hg @ 1107
- 1200 At [REDACTED] S Clark St to install sub-slab
port and 2 indoor air sample. Owner
has Radon TB barrier under the
sub-slab. It's about 2" below the slab.

Put in the house

4 6/2/20 TCE Clinton Engines

Plan to collect an indoor air +

ambient air sample.

(8537-6) ^{Ambient air} ~~Ambient air~~ ^{TB} ; W side

Canister ID: L5198 Reg ID: 45

Start: -26.5" Hg @ 1224 End: -2.5" Hg @ 0940

(8537-7) Indoor Air; Main air

Canister ID: 4568 Reg ID: 23

Start: -30" Hg @ 1228 End: -5.5" Hg @ 0936

1245 Lunch

1315 Gather supplies

1340 At [redacted] E Maple to install sub-slab port and indoor air sample.

(8537-8) Indoor air; Main area

Canister ID: 4559 Reg ID: 45

Start: -28.5" Hg @ 1406 End: -3" Hg @ 1307

1411 At (8537-9) [redacted] S Matteson St

to install sub-slab port + indoor air sample.

(8537-10) Indoor air; living room

Canister ID: 14976 Reg ID: 13

Start: -30" Hg @ 1434 End: -7" Hg @ 1339

1442 At (8537-10) [redacted] S Matteson St

to install port + indoor air.

(8537-10) Indoor air; main area

Canister ID: 3013 Reg ID: 14

Start: -30" Hg @ 1500 End: -9" Hg @ 1409

6/2/20 TCE Clinton Engines

5

1514 At [redacted] S Otto to install port and indoor air sample.

(8537-11) Indoor air; main area

Canister ID: L5203 Reg ID: 180

Start: -27" Hg @ 1543 End: 0 @ 1444

1550 At [redacted] S Otto St to install port and indoor air.

(8537-12) Indoor air; kitchen

Canister ID: L5110 Reg ID: 176

Start: -30" Hg @ 1608 End: -2 @ 1514

1617 (8537-13) At [redacted] E Platt to install port + indoor air sample.

(8537-13) Indoor air; kitchen

Canister ID: 2996 Reg ID: 166

Start: -30" Hg @ 1641 End: -4" Hg @ 1548

1648 At [redacted] E Platt St to install port and indoor air sample.

(8537-14) Indoor air; main floor

Canister ID: 3032 Reg ID: 165

Start: -30" Hg @ 1707 End: -3" Hg @ 1623

1714 At [redacted] S Matteson St to install port + indoor air sample.

(8537-15) Indoor air; main area

Canister ID: R0499 Reg ID: 103

Start: -24.99 -29.5" Hg @ 1738

End: -4.5" Hg @ 1656

Return in the bin

6/2/20 TCE Clinton Engines

^{TB} 1745 At [redacted] S Matteson St to

collect grab sub-slab sample and
pick up indoor air sample. Picked
up ~~8537~~ ^{TB} 8537-1. Info on page 2.
Perform leak test on port. ~~Grab~~ ^{TB}

~~TB sample for 8537-16. Sample~~

~~Canister ID: 3019 TB~~ Port was
~~Start: -30" Hg End: TB~~ filled with
~~8537-16~~ ^{TB} water. No sub-slab taken.

Create new port on other side
of the basement.

1930 ~~En~~ ^{TB} off site for day.

TB

6/2/20

6/3/20 TCE Clinton Engines

0740 SIMS Barbeau and Gatz leave for
site.

0815 Arrive at [redacted] S Clark St. to collect
sub-slab grab sample and pick up
indoor air sample. 8537-2 info on
page 3.

8537-16 Sub-slab grab: E side of basement
Canister ID: L5111 Reg ID: TB
Time: 0847 Start: -30" Hg End: -2" Hg

0902 At [redacted] S Matteson St to collect
sub-slab grab sample and pick up
indoor air sample. 8537-3 info on
page 3.

8537-17 Sub-slab grab: E side basement
Canister ID: 2998 Time: 0919
Start: -30" Hg End: -3" Hg

0935 At [redacted] S Clark to collect indoor
air & ambient air. 8537-6 & 8537-7
Info on page 4.

0954 At [redacted] S Matteson St to collect
ambient air. 8537-4 info on page
3.

1025 Work on lab sheets and forms.

1105 At [redacted] S Matteson St to collect
sub-slab grab sample & indoor air
sample. 8537-5 info on page 3.

8

6/3/20 TCE Clinton Engines

[8537-18] Sub-slab grab, basement

Canister ID: 3020 Reg-ID:

Time: 1119 Start: -30" Hg End: -5" Hg

1215 Lunch

1253 At [redacted] E Maple St to collect sub-slab grab sample + indoor air.

[8537-8] info on page 4.

[8537-19] : Sub-slab grab, basement

Canister ID: 899 Time: 1310

Start: -30" Hg End: -5" Hg

1325 At [redacted] S Matteson St to collect sub-slab grab sample and indoor air sample. [8537-9] info on page 4.

~~[8537-20] : Sub-slab grab, basement TB~~~~Canister ID: 3245 Time: TB~~~~TB Start: -30" Hg End: TB~~ Port was

filled with sediment, void canister.

Try redrilling further from sub pump.
New port drilled.

1405 At [redacted] S Matteson St to collect sub-slab grab + indoor air. [8537-10] info on page 4.

[8537-20] : Sub-slab ^{grab}, basement

Time: 1435 Canister ID: 3255

Start: -30" Hg End: -5" Hg

9

6/3/20 TCE Clinton Engines

1442 At [redacted] S Otto St. to collect sub-slab port and indoor air sample.

[8537-11] info on page 5

[8537-21] : Sub-slab ^{grab}, basement

Canister ID: 30372 Time: 1500

Start: -29.5" Hg End: -3" Hg

1509 At [redacted] S Otto St to collect sub-slab grab + indoor air sample.

[8537-12] info on page 5.

~~[8537-22] : Sub-slab grab, basement TB~~~~Canister ID: 65201 Time: TB~~~~Start: End: TB~~ Port

filled with sediment. Void sample.

Per EPA, no extra port will be drilled. Port also is loose and may need to be patched.

1547 At [redacted] E Platt St to collect sub-slab grab + indoor air sample.

[8537-13] Info on page 5. Sub-slab port was filled with water during leak test. No sub-slab grab collected.

1609 At [redacted] E Platt to collect sub-slab grab + indoor air samples.

[8537-14] info on page 5.

[8537-22] : sub-slab grab, basement

Canister ID: 3261 Time: 1634

10 6/3/20 TCE Clinton Engines

Start: -30" Hg End: -8-6" Hg
1644 At [redacted] S Matteson St to collect
sub-slab & indoor samples.

(8537-15) info on page 5.

(8537-23) Sub-slab grab, basement

Canister ID: 3249 Time: 1702

Start: -30" Hg End: -3" Hg

1716 At [redacted] S Matteson St to attempt
sub-slab grab sample from new port.

(8537-24) Sub-slab grab; basement

Canister ID: 4558 Time: 1741

Start: -30" Hg End: -10" Hg

Leaving both ports for now. Sample
valid per EPA but sediment did
peak out of the ground. Canister
had good vacuum throughout grab.

1752 At [redacted] S Matteson St to attempt
sub-slab grab from new port.

(8537-25) Sub-slab grab, basement

Canister ID: 3239 Time: 1805

Start: -30" Hg End: -12" Hg

Leaving both ports for now. Canister
maintained vacuum but sediment
appeared from the port. May have
leaked into the canister.

1900

1845 TB Off site for day. 6/3/20 TB

6/4/20 TCE Clinton Engines

11

0830 Leave from site.

1500 Return to Ft Kansas City.

Demobilize and return supplies.

1615 Finish prepping samples for drop-off
at EPA Lab on Friday. Check labels,
complete COC & field sheets. Will drop off on
6/5/20.
End day

RGG 6/4/20

Rite in the Rain

12 7/20/20 TCE Clinton Engines

0900 Load up at hotel
 0915 Move to City hall
 0920 meet w/ Yvonne Smith (EPA)
 0930 move to [redacted] E Maple St
 to install port (42.06604, -90.6562)

IA set indoor air only (1 story building)
 Sample ID Reg ID Time start Start time End time End time
 8612-1 15205 34 0949 -29.5" 0856 -6"

in living room
 0959 move to [redacted] Dearborn St
 (42.06960, -90.65838)

IA
 Sample ID Canister ID Reg ID Start time Start time End time End time
 8612-2 14974 57 1035 -30 0912 -7"

in living room
 move to [redacted] E Platt St
 42.06858, -90.64954

IA to install port (basement) + set indoor air
 ID Can # Reg # Start time Start time End time End time
 8612-3 R0492 60 1110 -29 1020 -4"

paints/solvents stored behind stage
 isolated from public space, indoor
 air set in auditorium/theater
 move to [redacted] E Maple St
 42.06649, -90.65175

install port in left building, [redacted] in

7/20/20

13

Shop area by shelving. Set up indoor
 air in left building (shop) + right

IA building (office)
 ID Can # Reg # Start time/press End time/press
 8612-4 833 35 1153 -30" 1044 -2.5"

R0612-5 14977 81 1155 -30" 1058 -4"

1215 move to [redacted] E Maple St (City Electric)
 to install port (furnace closet)

IA + set indoor air 24-hr (office room w/ furnace)
 ID Can # Reg # Start time/press End time/press
 8612-6 811 69 1238 -29.5 11203 -4

location 42.06795, -90.65573

1245 move to [redacted] E Maple St

IA no basement - set up indoor air only
 ID Can # Reg # Start time/press End time/press
 8612-7 R0496 55 1255 -30 1222 -7" Hg

1300 move to [redacted] S Matteson St (-90.66068)
 to install basement port (by furnace)

IA + set indoor air (24-hr) living room
 ID Can # Reg # Start time/press End time/press
 8612-8 642 54 1330 -30 1254 -3.5

1335 move to [redacted] S Matteson St (-90.66078)
 install port (basement)

+ set indoor air 24-hr

see next page

Rite in the Rain

14 7/20/20

IA ID can# 24hr reg# start time / press. end time / press. (7/21)
8612-9 823 91 1357 -29" Hg 1310 -1.5" Hg
1455 move to [redacted] E Maple St (42.06622, -90.65978)

to install port (basement by fridge/freezer)

IA +set 24-hr indoor air (7/21)
ID can# 24hr reg# start time / press. end time / press.
8612-10 646 91 1528 -28.5 1440 -2" Hg
1530 move to [redacted] S Clark St (42.06517, -90.65946)

to install port basement by furnace

IA +set indoor air 24-hr (dining table/kitchen) (7/21)
ID can# 24hr reg# start time / press. end time / press.
8612-11 15187 101 1602 -29.5" 1534 -5"
1605 move to [redacted] E Platt St (42.06677, -90.65034)

IA to set indoor air only (7/21)
ID can# 24hr reg# start time / press. end time / press.
8612-12 639 102 1625 -29 1558 -3
1700 move to [redacted] Platt St (42.06674, -90.65485)

to install port (basement)

IA +set indoor air (living room) (7/21)
ID can# 24hr reg# start time / press. end time / press.
8612-13 640 63 1722 -29" 1645 -3"
1730 move to [redacted] S Matthews St (42.06752, -90.66064)

to install port (basement-second room corner)

+set 24hr indoor air (living room)

7/20/20

15

IA ID can# 24hr reg# start time / press. end time / press. (7/21)
8612-14 836 62 1755 -30" Hg 1708 -3" Hg
1800 move to [redacted] E Platt St (42.06889, -90.65084)

to install port (basement by stairs)

IA +set indoor air (24hr) (living room) (7/21)
ID can# 24hr reg# start time / press. end time / press.
8612-15 15186 52 1830 -29" 1738 -3.5" Hg
1900 leave site, end day

Betham Lab

Plot in the Room

16 7/21/20

0830 meet w/ BGS (Mike Orcedy)
to discuss plan.

0845 move to [redacted] E Maple St to
pick up sample 8612-1

0900 move to [redacted] N Dearborn St
to pick up BIA sample 8612-2
+ collect sub-slab sample (grab)

| ID | can# | start time | press | end time | press |
|---------|------|------------|------------------------|----------|---------------------------|
| 8612-10 | 721 | 0915 | -0.5 ⁵⁰ -30 | | -0.5 ⁵⁰ -1" Hg |

1015 move to [redacted] E Platt St to
collect IA sample 8612-3 + collect
sub-slab sample (grab)

| ID | can# | start time | start press | end press |
|---------|-------|------------|-------------|---------------------|
| 8612-11 | R0489 | 1024 | -30" Hg | -2 ⁸⁰ Hg |

1036 move to [redacted] E Maple St. to
collect IA sample 8612-4 + 8612-5
+ collect sub-slab grab (left building porch)

| ID | can# | start time | start press | end press |
|---------|------|------------|-------------|----------------------------|
| 8612-18 | 713 | 1046 | -30" Hg | -2 ⁸⁰ Hg -4" Hg |

1100 Buy ice for samples at Casey's

1115 move to [redacted] Hurst 62
to collect private well GW sample
well head is on west side (right) of
house ~ 50 ft. Purge for 5 minutes

1127 collect sample 8595-101 + MS/MSD

7/21/20

17

1155 move to [redacted] E Maple St
to collect IA 8612-6

| SS | ID | can# | start time | start press | end press |
|----|---------|------|------------|-------------|-----------|
| | 8612-19 | 725 | 1208 | -30 | -2 |

1220 move to [redacted] E Maple
to collect IA 8612-7

1225 move to 316 S Matteson St
to collect IA sample 8612-8

| SS | ID | can# | start time | start press | end press |
|----|---------|------|------------|-------------|-----------|
| | 8612-20 | 814 | 1256 | -30" | -8" |

1310 move to [redacted] S Matteson
to collect IA sample 8612-9

| SS | ID | can# | start time | start press | end press |
|----|---------|-------|------------|-------------|-----------|
| | 8612-21 | R2221 | 1313 | -30" Hg | -2" Hg |

1340 move to [redacted] Pershing Rd - supplies multiple
apartments
to collect private well GW sample

purge 5 minutes

| ID | can# | start time | start press | end press |
|----------|------|------------|-------------|-----------|
| 8595-102 | 102 | 1350 | -102 | -102 |

1355 collect sample 8595-102-FD

1400 move to [redacted] Pershing Rd,
to collect private well GW sample
Purge 5 minutes

Ret. in the house

18 7/21/20

1410 collect sample 8595-104
 1415 move to [redacted] Hwy 62
 to collect private well Gw sample
 purge 5 minutes

1425 collect sample 8595-105

1430 move to [redacted] E Maple St
 to collect indoor air sample 8612-10

SS + sub-slab grab sample

| ID | can# | start time | start press. | End press. |
|---------|-------|------------|--------------|------------|
| 8612-22 | L5184 | 1444 | -30" Hg | -2" Hg |

1500 move to [redacted] E Maple St
 to set indoor air (office cabinets inside main door) will install port

IA next morning.

| ID | can# | 24hr log# | start time | start press. | End time | press. |
|---------|-------|-----------|------------|--------------|----------|--------|
| 8612-23 | L5193 | 5 | 1522 | -30 | 1409 | -2" Hg |

1530 move to [redacted] S Clark St
 to collect indoor air sample 8612-11

SS + sub-slab grab sample

| ID | can# | start time | start press. | End press. |
|---------|------|------------|--------------|------------|
| 8612-24 | 611 | 1537 | -30" | -0.5" |

1550 move to [redacted] E Platt
 to collect IA sample 8612-12

1610 move to [redacted] Hwy 64
 to collect Private well Gw sample

7/21/20

1613 Purge 5 minutes

1618 collect sample 8595-106

1625 move to [redacted] E Platt St.
 to collect IA sample 8612-13

SS + sub-slab grab sample

| ID | can# | start time | start press. | End press. |
|---------|------|------------|--------------|------------|
| 8612-25 | 631 | 1648 | -30" Hg | -2" Hg |

1700 move to [redacted] S Matheson
 to pick up IA 8612-14

SS + sub-slab grab sample

| ID | can# | start time | start press. | End press. |
|---------|------|------------|--------------|------------|
| 8612-26 | 728 | 1712 | -30" Hg | -2" Hg |

1720 move to [redacted] E Platt
 to collect IA 8615-15

SS + sub-slab grab sample

| ID | can# | start time | start press. | End press. |
|---------|------|------------|--------------|------------|
| 8612-27 | 649 | 1741 | -30" Hg | -2" Hg |

1800 meet briefly w/ BGS to ^{see} off site @ hotel
 1815 End day

Bethany Goss

20 7/22/20

0745 Load up at hotel & move to site
0805 arrive at [redacted] E Maple St

to install port, will allow to ^{pc}
dry & sample sub-slab ~~with~~
at time of IA pick up ~2:30 pm
port is located in shop area along
left side wall & back corner,
0840 move to first soil boring location
BGS on site already.

0900 coordinate with city wastewater
(Steve) to confirm sewer line depth
→ 8 ft bgs

0915 Fresh air calibration for PID.

0920 Begin pushing SB-01 at S Clark &
Locust St.

0934 collect sample SB-01-0910-072220/
8595-1 @ 9-10" bgs

0950 collect sample 8595-2 / SB-01-1516-072220
@ 15-16 ft bgs SB-01

TD: 16 ft bgs

1000 set up DPT ng at SB-02 across from
Clinton engines driveway & begin pushing

1015 collect sample 8595-3 / SB-02-0910-072220
@ 9-10 ft bgs

1030 collect sample 8595-4 / SB-02-1617-072220 ¹⁵¹⁶ ¹⁶¹⁷ ¹⁵¹⁶ ¹⁶¹⁷

7/22/20

^{BG} 1035 Finish pushing SB-02 to ^{16 ft} bgs

1040 set up at SB-03 S Clark St & E Maple

1055 collect sample 8595-5 / 8595-5-FD
SB-03-0910-072220 @ 9-10 ft bgs ^L@1058

1115 collect sample 8595-7 / SB-03-1516-072220
@ 15-16 ft bgs TD: 16 ft bgs South

1120 set up at SB-04 by [redacted] E Maple (S side)
^BNote: Boring is located adjacent
to 20 ^{BG} plus 40 plus old lawnmowers
stored on property

1130 collect sample 8595-8 / ms/msD /
SB-04-0910-072220 @ 9-10 ft bgs

1150 collect sample 8595-9 / SB-04-1516-072220
@ 15-16 ft bgs TD: 16 ft bgs

1200 set up at SB-05 E Maple ~100 yds E of S Clark St.

1215 collect sample 8595-10 / SB-05-0910-072220
@ 9-10 ft bgs

1225 collect sample 8595-11 / SB-05-1516-072220
@ 15-16 ft bgs TD: 16 ft bgs

1235 set up at SB-06 by 203 S Clark St.

1254 collect sample 8595-12 / SB-06-0809-072220
@ 8-9 ft bgs

1300 collect sample 8595-13 / SB-06-1516-072220
@ 15-16 ft bgs PID = 4.5 ppm TD: 16 ft bgs

1305 Finish borings, BGS cleans up →

Rita in 2008

22 7/22/20

1305 cont'd... + patches borings w/ bentonite

1320 BGS off site

1355 move to [redacted] E maple st

to collect IA sample [8612-23]

+ collect sub-slab grab sample

| SS ID | can# | start time | start press. | end press. |
|-------|------|------------|--------------|------------|
|-------|------|------------|--------------|------------|

| | | | | |
|---------|-------|------|---------|--------|
| 8612-28 | R0494 | 1412 | -30" Hg | -4" Hg |
|---------|-------|------|---------|--------|

12th 1425 move to [redacted] Pershing (wastewater treatment plant) to meet w/ city to sample city wells

1435 move to City well 4

1440 ^{B6} collect water sample from pump house (raw) [8595-107] at 42.0752, -90.66660

49 After purging 5 minutes
1451^{B6} move to city well 5 (42.06207, -90.67444)

1455 purge 5 minutes

1500 collect sample [8595-108] pump house raw water

1505 move to city well 6 pump house

1510 purge 5 minutes (42.06215, -90.66364)

1515 collect sample [8595-109] raw water

1520 collect field blank [8595-110-FB] WIDE

1530 sort + pack samples, buy ice

1610 return to hotel, end day

Bethany Lutz

7/23/20 23

0815 Check out at hotel + mob

Leave for EPA Lab to

drop off ASR 8595 + 8612

1500 drop off samples at EPA Lab

1530 arrive back at office + unload equipment

1600 End day

Bethany Lutz

Rita [unclear]

2/22/21 TCE Clinton Engines - VI Resampling

0945 Load up at office (STM B Gatz)

1000 Depart ICC office

11050 arrive on site

1700 knock at 803 E Maple, set up
appt for 4:30-5pm next day

1710 knock at [redacted] N Dearborn, set up
appt for 1pm next day

1715 At [redacted] Platt, set Indoor Air 2hr

| Sample ID | Can# | Reg# | Start Time/press | End Time/press |
|-----------|------|------|---------------------|-------------------|
| 81718-1 | 692 | 4 | 1729 -29 | 1610 -6 |

Note: will collect sub slab when IA is
picked up due to snow block
on basement access.

1735 Sharon Kennedy (EPA) on site

1740 move to [redacted] Matteson, talk to
son will stop by next day after 5pm
to talk to owner & do IA/SS sample

1755 depart site for hotel

1805 arrive at hotel, paperwork

1820 End day

Bottom Just

TCE Clinton Engines - VI Resampling 2/23/21

0925 Load up at hotel

0935 depart hotel for site

0945 At [redacted] E Maple, set 24 hr IA & SS Grab
in W (west) building, on corner

| Sample ID | Can# | Reg# | Start Time/press | End Time/press |
|-----------|------|------|---------------------|-------------------|
| 81718-2 | 805 | 8 | 0949 -30 | 0945 -4.5 |
| 81718-3 | 694 | — | 0956 -30 | — |

1010 At [redacted] E Maple, set 24 hr IA & SS Grab

| Sample ID | Can# | Reg# | Start Time/press | End Time/press |
|-----------|------|------|---------------------|-------------------|
| 81718-4 | 540 | 10 | 1017 -20.5 | 0950 0 |
| 81718-5 | 736 | — | 1021 -30 | — -3 |

1255 At [redacted] N Dearborn, set 24 hr IA & SS Grab

| Sample ID | Can# | Reg# | Start Time/press | End Time/press |
|-----------|------|------|---------------------|-------------------|
| 81718-6 | 689 | 128 | 1301 -29 | 1142 -7.5 |

81718-7 726 *Be Not collected*

Note: sub slab not collected due to port
plug being too rusted in place (wet basement
& not having port installation tools to properly
remove & replace port.

1335 At [redacted] E Platt, set 24 hr IA & SS Grab

| Sample ID | Can# | Reg# | Start Time/press | End Time/press |
|-----------|------|------|---------------------|-------------------|
| 81718-7 | 726 | 113 | 1343 -29 | 1214 -6 |
| 81718-8 | 710 | — | 1346 -30 | — -2 |

1400 Lunch

550 move to [redacted] E Platt to pickup

Rite in the Rain

2/23/21

1610 At 908 E Platt pick up IA + collect 23 grab
~~Sample ID~~ ~~Can#~~ ~~Leg#~~ ~~Start time/press~~ ~~End time/press~~

NA

Note sub slab not collected due to
 water in basement & port plug
 rusted in place.

1638 At [redacted] E Maple, set 24-Hr IA
~~Sample ID~~ ~~Can#~~ ~~Leg#~~ ~~Start time/press~~ ~~End time/press~~

8718-9 836 163 1644 -28 1528 -5

1730 At [redacted] S Matteson, set 24-Hr IA + SS-Grab

~~Sample ID~~ ~~Can#~~ ~~Leg#~~ ~~Start time/press~~ ~~End time/press~~

8718-10 835 164 1734 -29 1620 -4

8718-11 813 — 1740 -30 — -3 S

1755 Set 24-Hr Ambient + Air at ~~1910 N Main St~~
 (American) ~~607 E Maple (Clinton Engines Museum)~~

~~Sample ID~~ ~~Can#~~ ~~Leg#~~ ~~Start time/press~~ ~~End time/press~~

8718-12 672 6 1845 -30 1655 -6 -4

1845 Stop by Walmart to get fixed/sturdier
 hex key to try at rusted ports

1900 arrive at hotel, end day

~~Beckham's Gap~~

2/24/21

1550 load up at hotel

0835 depart for site

0945 pick up IA sample at [redacted] E Maple

0850 pick up IA sample at [redacted] E Maple

1142 pick up IA sample at [redacted] N Dearborn
 tried to open sub slab port again, unable
 to open. No sub-slab sample collected.

1214 pick up IA at [redacted] E Platt

1528 pick up IA at [redacted] E Maple

~~pick up IA at BG~~

1600 check Ambient Air location - canister
 is missing from museum parking lot
 talk to museum staff, one of the
 staff moved it, will pick up after
 219 S Matteson pick up

1620 pick up IA at [redacted] S Matteson

1655 pick up IA Ambient Air sample (has
 been off site ([redacted] E Maple) for a
 few hours per museum staff, majority
 of hours were collected on site.

1705 depart for hotel

1735 return to hotel, paperwork

1800 end day

~~Beckham's Gap~~

Beckham's Gap

APPENDIX C
SOIL BORING LOGS

Boring Log Form

Site Name: Clinton Engines

Boring Number: SBI

Date Drilled (Start/Finish): 7/22/20

Drilling Method: DPT

Drilling Company: BGS

Elevation: _____

Total Depth: 16 ft bgs

Coordinates: 42.06465, -90.65928

Depth to Water: _____

Geologist: _____

Project Number: _____

Weather: mostly sunny, high 80°F

| Sample Interval | Interval | Soil Recv. | PID Reading (ppm) | Depth (Feet) | Color (Munsell or Rock) | Lithology | Graphic Log | Description and Remarks |
|-----------------|----------|------------|-------------------|--------------|-------------------------|-----------|-------------|--|
| | | | 0 | 0 | Asphalt | | | Asphalt |
| | | | 0 | 0 | Fill | | | Fill |
| | | | 0 | 0 | Fill | | | Fill |
| | | | 0 | 4 | clay | | | clay |
| | | | 0 | 0 | clay | | | |
| | | | 0 | 0 | | | | |
| | | | 0 | 0 | | | | |
| | | | 0 | 8 | | | | |
| | | | 0 | 0 | | | | |
| 9-10 | 9-10 | | 0 | 0 | | | | collect sample SB-01-0910-072220/ @ 9-10' bgs 8595-1 09:34 |
| | | | 0 | 0 | | | | |
| | | | 0 | 12 | | | | |
| | | | 0 | 0 | | | | |
| | | | 0 | 0 | | | | |
| 15-16 | | | 0 | 16 | | | | collect sample 8595-2/SB-01-1516-072221 |
| | | | | 0 | | | | |
| | | | | 20 | | | | |
| | | | | 0 | | | | |
| | | | | 24 | | | | |
| | | | | 0 | | | | |
| | | | | 28 | | | | |
| | | | | 30 | | | | |

Boring Log Form

Site Name: Clinton Engines

Boring Number: SB2

Date Drilled (Start/Finish): 7/22/20

Drilling Method: RPT

Drilling Company: BGS

Elevation:

Total Depth: ~~16 ft bgs~~ ^{BG} ~~18 ft bgs~~ ^{BG} 16 ft bgs

Coordinates: 42.06534, -90.65933

Depth to Water: ~8 ft bgs ^{BG} not encountered

Geologist:

Project Number:

Weather: partly cloudy, high 80°

| Sample Interval | Interval | Soil Recv. | PID Reading (ppm) | Depth (Feet) | Color (Munsell or Rock) | Lithology | Graphic Log | Description and Remarks |
|-----------------|----------|------------|-------------------|--------------|-------------------------|-----------|-------------|--|
| | | | 0 | 0 | | | | Asphalt Fill - 0.5' tan clay |
| | | | 0 | 4 | | | | |
| | | | 0 | 8 | | | | saturated |
| 9-10 | | | 0 | 12 | | | | collect sample 8595-3/SB-02-0910-0722/20 |
| | | | 0 | 16 | | | | sandy clay saturated |
| 15-16 | | | 0 | 18 | | | | collect sample 8595-4/SB02-1516-0722/20 |
| 16-17 | | | 0 | 20 | | | | |
| | | | | 24 | | | | |
| | | | | 28 | | | | |
| | | | | 30 | | | | |

BG

1516
BG

Boring Log Form

Site Name: Clinton Engines

Boring Number: SB3

Date Drilled (Start/Finish): 7/22/20

Drilling Method: DPT

Drilling Company: BGS

Elevation: _____

Total Depth: 16ft bgs

Coordinates: 42.06624, -90.65932

Depth to Water: ~9ft bgs

Geologist: _____

Project Number: _____

Weather: Sunny, 80°F

| Sample Interval | Interval | Soil Recv. | PID Reading (ppm) | Depth (Feet) | Color (Munsell or Rock) | Lithology | Graphic Log | Description and Remarks |
|-----------------|----------|------------|-------------------|--------------|-------------------------|-----------|-------------|---|
| | | | 2.2 | | | | | Asphalt 0-1ft fill |
| | | | ↓ | 4 | | | | ↓ |
| | | | ↓ | 8 | | | | foamy clay clay (gray) |
| 9-10 | | | ↓ | 12 | | | | wet tan clay collect sample 8595-5 + 8595-5-FC SB03-0910-0722 |
| | | | ↓ | 16 | | | | ↓ |
| 15-16 | | | ↓ | 20 | | | | soft wet clay soft sandy clay grey sandy clay |
| | | | ↓ | 24 | | | | ↓ sand lense @ bottom of 14ft bgs |
| | | | ↓ | 28 | | | | Sand collect sample 8595-71/ very wet SB-03-1516-072220 |
| | | | ↓ | 30 | | | | |

Boring Log Form

Site Name: Clinton Engineers

Boring Number: SB4

Date Drilled (Start/Finish): _____

Drilling Method: DPT

Drilling Company: BGS

Elevation: _____

Total Depth: 16 ft bgs

Coordinates: 42.06642

Depth to Water: -90.65922

Geologist: _____

Project Number: _____

Weather: _____

| Sample Interval | Interval | Soil Recv. | PID Reading (ppm) | Depth (Feet) | Color (Munsell or Rock) | Lithology | Graphic Log | Description and Remarks |
|-----------------|----------|------------|-------------------|--------------|-------------------------|-----------|-------------|--|
| | | | 0 | 0 | | | | top soil |
| | | | ↓ | 4 | | | | clay/silty clay dark brown |
| | | | 0 | 8 | | | | grey sand/ clay w/ sand lense (5-6) |
| 9-10 | | | ↓ | 12 | | | | collect sample [8595-8 + ms/msD] SB04-0910-072220 |
| | | | 0 | 16 | | | | sand lense |
| 15-16 | | | ↓ | 20 | | | | sand |
| | | | 0 | 24 | | | | collect sample [8595-9] SB04-1516-072220 |
| | | | | 28 | | | | |
| | | | | 30 | | | | |

Boring Log Form

Site Name: Clinton Engines

Boring Number: SBS

Date Drilled (Start/Finish): 7/22/20

Drilling Method: BPT

Drilling Company: BGS

Elevation: _____

Total Depth: 16 ft bgs

Coordinates: 42.06631

Depth to Water: -90.65852

Geologist: _____

Project Number: _____

Weather: _____

| Sample Interval | Interval | Soil Recv. | PID Reading (ppm) | Depth (Feet) | Color (Munsell or Rock) | Lithology | Graphic Log | Description and Remarks |
|-----------------|----------|------------|-------------------|--------------|-------------------------|-----------|-------------|--|
| | | | ○ | | | | | Gravel fill |
| | | | ○ | 4 | | | | dark brown clay/silty clay |
| | | | ○ | | | | | tile layer |
| | | | ○ | 8 | | | | gray clay |
| 9-10 | | | ○ | 12 | | | | sandy clay collect sample <u>8595-10</u> / sand SB05-0910-072220 clay (dark brown) |
| | | | ○ | | | | | sandy clay |
| | | | ○ | 16 | | | | gray clay/silty clay |
| 15-16 | | | ○ | | | | | sand wet sandy/sandy clay collect sample <u>8595-11</u> SB05-1516-072220 |
| | | | | 20 | | | | |
| | | | | 24 | | | | |
| | | | | 28 | | | | |
| | | | | 30 | | | | |

Boring Log Form

Site Name: Clinton Engines

Boring Number: SB6

Date Drilled (Start/Finish): 7/22/20

Drilling Method: PPT

Drilling Company: BGS

Elevation: _____

Total Depth: 16 ft bgs

Coordinates: 42.06694, -90.65929

Depth to Water: _____

Geologist: _____

Project Number: _____

Weather: Sunny, 80°F

| Sample Interval | Interval | Soil Recv. | PID Reading (ppm) | Depth (Feet) | Color (Munsell or Rock) | Lithology | Graphic Log | Description and Remarks |
|-----------------|----------|------------|-------------------|--------------|-------------------------|-----------|-------------|---|
| | | | 0 | 0 | | | | Asphalt gravel fill |
| | | | ↓ | 4 | | | | dark brown clay |
| | | | ↓ | | | | | gray clay |
| | | | 0 | 8 | | | | sandy clay |
| 8-9 | | | ↓ | | | | | collect sample <u>BS95-11</u> SB06-0809-072220 |
| | | | 0 | 12 | | | | sand sandy clay sand wet |
| | | | 1.5 | | | | | |
| 15-16 | | | 4.5 | 16 | | | | collect sample <u>BS95-12</u> SB06-1516-072220 |
| | | | | 20 | | | | |
| | | | | 24 | | | | |
| | | | | 28 | | | | |
| | | | | 30 | | | | |

2

APPENDIX D

PHOTOLOG

**TCE Clinton Engines
Maquoketa, Iowa**



| | | | |
|---|--------------|---|----------|
| TETRA TECH PROJECT NO. 103X903019F0086.004 Direction: NA | DESCRIPTION | This photograph shows a typical sub-slab port installation. This port was installed at [REDACTED] S. Matteson St. | 1 |
| | CLIENT | U.S. Environmental Protection Agency Region 7 | Date |
| | PHOTOGRAPHER | Bethany Gatz | 6/3/2020 |



| | | | |
|---|--------------|--|----------|
| TETRA TECH PROJECT NO. 103X903019F0086.004 Direction: East | DESCRIPTION | This photograph shows the indoor air sample at [REDACTED] S. Clark St. | 2 |
| | CLIENT | U.S. Environmental Protection Agency Region 7 | Date |
| | PHOTOGRAPHER | Bethany Gatz | 6/2/2020 |

**TCE Clinton Engines
Maquoketa, Iowa**



| | | | |
|---|---------------------|---|----------|
| TETRA TECH PROJECT NO. 103X903019F0086.004 Direction: NA | DESCRIPTION | This photograph shows the indoor air sample at [REDACTED] S. Matteson St. | 3 |
| | CLIENT | U.S. Environmental Protection Agency Region 7 | Date |
| | PHOTOGRAPHER | Bethany Gatz | 6/2/2020 |



| | | | |
|---|---------------------|---|----------|
| TETRA TECH PROJECT NO. 103X903019F0086.004 Direction: NA | DESCRIPTION | This photograph shows the indoor air sample at [REDACTED] S. Otto St. | 4 |
| | CLIENT | U.S. Environmental Protection Agency Region 7 | Date |
| | PHOTOGRAPHER | Bethany Gatz | 6/2/2020 |

**TCE Clinton Engines
Maquoketa, Iowa**



| | | | |
|--|---------------------|---|----------|
| TETRA TECH PROJECT NO. 103X903019F0086.004 Direction: NA | DESCRIPTION | This photograph shows the indoor air sample at [REDACTED] S. Otto St. | 5 |
| | CLIENT | U.S. Environmental Protection Agency Region 7 | Date |
| | PHOTOGRAPHER | Bethany Gatz | 6/2/2020 |



| | | | |
|--|---------------------|---|----------|
| TETRA TECH PROJECT NO. 103X903019F0086.004 Direction: NA | DESCRIPTION | This photograph shows the indoor air sample at [REDACTED] S. Matteson St. | 6 |
| | CLIENT | U.S. Environmental Protection Agency Region 7 | Date |
| | PHOTOGRAPHER | Bethany Gatz | 6/2/2020 |

**TCE Clinton Engines
Maquoketa, Iowa**



| | | | |
|---|--------------|---|----------|
| TETRA TECH PROJECT NO. 103X903019F0086.004 Direction: NA | DESCRIPTION | This photograph shows the indoor air sample at [REDACTED] S. Matteson St. | 7 |
| | CLIENT | U.S. Environmental Protection Agency Region 7 | Date |
| | PHOTOGRAPHER | Bethany Gatz | 6/2/2020 |



| | | | |
|---|--------------|---|-----------|
| TETRA TECH PROJECT NO. 103X903019F0086.004 Direction: NA | DESCRIPTION | This photograph shows the indoor air sample at [REDACTED] Maple St. | 8 |
| | CLIENT | U.S. Environmental Protection Agency Region 7 | Date |
| | PHOTOGRAPHER | Bethany Gatz | 7/20/2020 |

**TCE Clinton Engines
Maquoketa, Iowa**



| | | | |
|---|---------------------|--|-----------|
| TETRA TECH PROJECT NO. 103X903019F0086.004 Direction: NA | DESCRIPTION | This photograph shows the indoor air sample at [REDACTED] E. Maple St. | 9 |
| | CLIENT | U.S. Environmental Protection Agency Region 7 | Date |
| | PHOTOGRAPHER | Bethany Gatz | 7/20/2020 |



| | | | |
|---|---------------------|---|-----------|
| TETRA TECH PROJECT NO. 103X903019F0086.004 Direction: West | DESCRIPTION | This photograph shows collection of sample from City Well #4. | 10 |
| | CLIENT | U.S. Environmental Protection Agency Region 7 | Date |
| | PHOTOGRAPHER | Bethany Gatz | 7/22/2020 |

**TCE Clinton Engines
Maquoketa, Iowa**



| | | | |
|--|--------------|---|------------|
| TETRA TECH PROJECT NO. 103X903019F0086.004 Direction: North | DESCRIPTION | This photograph shows the Superfund Technical Assessment and Response Team (START) screening the soil core from SB-6. | 11 |
| | CLIENT | U.S. Environmental Protection Agency Region 7 | Date |
| | PHOTOGRAPHER | Bethany Gatz | 07/22/2020 |



| | | | |
|---|--------------|---|------------|
| TETRA TECH PROJECT NO. 103X903019F0086.004 Direction: West | DESCRIPTION | This photograph shows direct-push technology (DPT) operations at location SB-6. | 12 |
| | CLIENT | U.S. Environmental Protection Agency Region 7 | Date |
| | PHOTOGRAPHER | Bethany Gatz | 07/22/2020 |

**TCE Clinton Engines
Maquoketa, Iowa**



| | | | |
|---|---------------------|--|------------|
| TETRA TECH PROJECT NO. 103X903019F0086.004 Direction: NA | DESCRIPTION | This photograph shows the indoor air sample at [REDACTED] E. Platt St. | 13 |
| | CLIENT | U.S. Environmental Protection Agency Region 7 | Date |
| | PHOTOGRAPHER | Bethany Gatz | 07/20/2020 |



| | | | |
|---|---------------------|--|------------|
| TETRA TECH PROJECT NO. 103X903019F0086.004 Direction: NA | DESCRIPTION | This photograph shows the indoor air sample at [REDACTED] E. Maple St. | 14 |
| | CLIENT | U.S. Environmental Protection Agency Region 7 | Date |
| | PHOTOGRAPHER | Bethany Gatz | 07/20/2020 |

APPENDIX E

INDOOR AIR BUILDING SURVEY AND SAMPLING FORM

INDOOR AIR BUILDING SURVEY
AND SAMPLING FORM

Preparer's name: Tim Barbeau Date: 6/2/20
Preparer's affiliation: Tetra Tech Phone #: _____
Site Name: TCE Clinton Engines Project #: 19F0086,004

Part I - Occupants

Building Address: ██████ S Clark St.
Property Contact: ██████████ Owner / Renter / other: _____
Contact's Phone: home () _____ work () _____ cell () _____
of Building occupants: Adults 2 Other _____

Part II - Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial
Describe building: 2-story Year constructed: _____
Sensitive population: day care / nursing home / hospital / school / other (specify): _____
Number of floors below grade: 1 (full basement) / crawl space / slab on grade
Number of floors at or above grade: 2
Depth of basement below grade surface: 8 ft. Basement size: _____ ft²
Basement floor construction: concrete / dirt / floating / stone / other (specify): _____
Foundation walls: poured concrete / cinder blocks / stone / other (specify) _____
Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No
Type of heating system (circle all that apply):
hot air circulation hot air radiation wood steam radiation
heat pump hot water radiation kerosene heater electric baseboard
other (specify): _____
Type of ventilation system (circle all that apply):
central air conditioning mechanical fans bathroom ventilation fans individual air
window air conditioning units kitchen range hood fan outside air intake
other (specify): _____
Type of fuel utilized (circle all that apply):
Natural gas / electric / fuel oil / wood / coal / solar / kerosene
Are the basement walls or floor sealed with waterproof paint or epoxy coatings? Yes / No

Is there a whole house fan? Yes / No

Septic system? Yes / Yes (but not used) / No

Irrigation/private well? Yes / Yes (but not used) / No

Type of ground cover outside of building grass / concrete / asphalt / other (specify) _____

Existing subsurface depressurization (radon) system in place? Yes / No active / passive

Sub-slab vapor/moisture barrier in place? Yes / No

Type of barrier: _____

Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): No

Heavy vehicular traffic nearby (or other mobile sources): No

Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources | Location(s) | Removed (Yes / No / NA) |
|-------------------------------|-------------|----------------------------|
| Gasoline storage cans | | |
| Gas-powered equipment | | |
| Kerosene storage cans | | |
| Paints / thinners / strippers | | |
| Cleaning solvents | | |
| Oven cleaners | | |
| Carpet / upholstery cleaners | | |
| Other house cleaning products | | |
| Moth balls | | |
| Polishes / waxes | | |
| Insecticides | | |
| Furniture / floor polish | | |
| Nail polish / polish remover | | |
| Hairspray | | |
| Cologne / perfume | | |
| Air fresheners | | |
| Fuel tank (inside building) | | NA |
| Wood stove or fireplace | | NA |
| New furniture / upholstery | | |
| New carpeting / flooring | | NA |
| Hobbies - glues, paints, etc. | | |

Part V – Miscellaneous Items

Do any occupants of the building smoke? *Yes / No* How often? _____

Last time someone smoked in the building? _____ hours / days ago

Does the building have an attached garage directly connected to living space? *Yes / (No)*

If so, is a car usually parked in the garage? *Yes / No*

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? *Yes / No*

Do the occupants of the building have their clothes dry cleaned? *Yes / (No)*

If yes, how often? _____ weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? *Yes / No*

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? *Yes / No*

Have any pesticides/herbicides been applied around the building or in the yard? *Yes / No*

If so, when and which chemicals? _____

Has there ever been a fire in the building? *Yes / No* If yes, when? _____

Has painting or staining been done in the building in the last 6 months? *Yes / No*

If yes, when _____ and where? _____

Part VI – Sampling Information

Sample Technician: Tim Barbeau Phone number: (816) 412 - 1964

Sample Source: (Indoor Air) / (Sub-Slab) / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / (Stainless Steel Canister) / Other (specify): _____

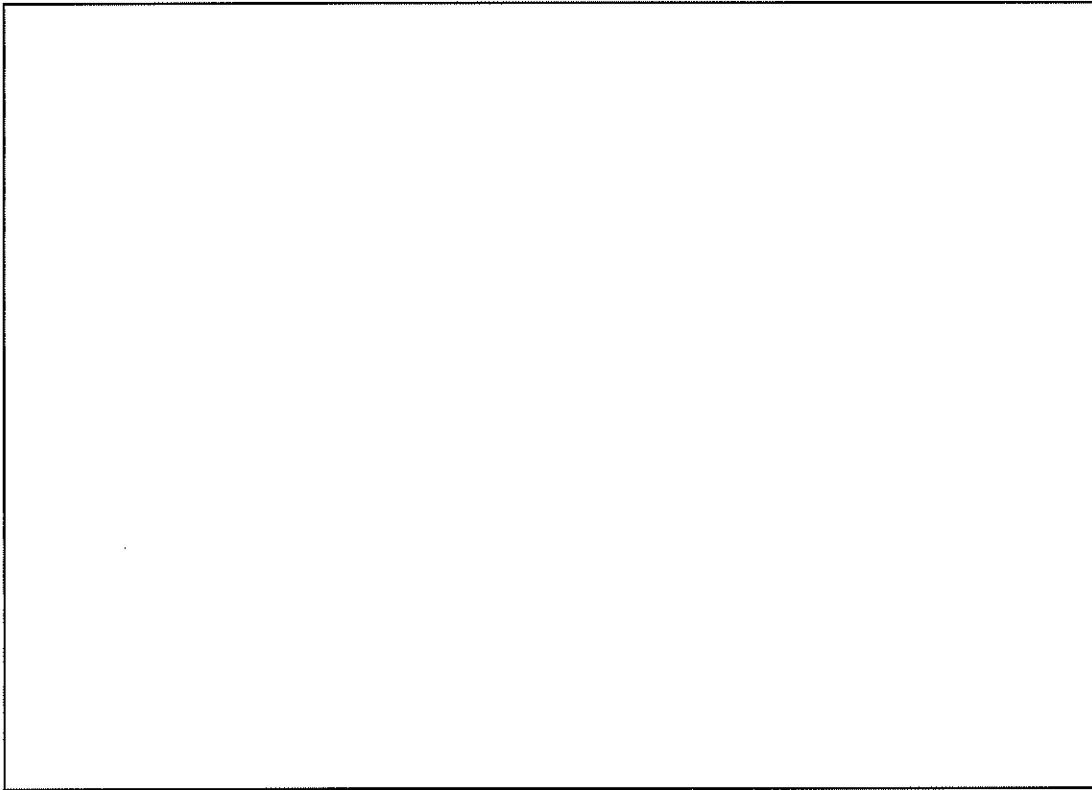
Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: _____

Sample locations (floor, room):

Field ID # 1 - living room Field ID # _____ - _____

Field ID # _____ - _____ Field ID # _____ - _____

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event? Yes / No

Describe the general weather conditions: Sunny, hot

Part VIII – General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

INDOOR AIR BUILDING SURVEY
AND SAMPLING FORM

Preparer's name: Yvonne M. Smith Date: 7/20/2020
Preparer's affiliation: USEPA R7 OSC Phone #: 913-551-7795
Site Name: TCE - Clinton Engines Site Project #: _____

Part I - Occupants

Building Address: [redacted] S. Clark
Property Contact: [redacted] Owner / Renter / other: _____
Contact's Phone: home [redacted] work () _____ cell () _____
of Building occupants: Adults 1 Other _____

Part II - Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial

Describe building: basement, floor level, & attic Year constructed: _____

Sensitive population: day care / nursing home / hospital / school / other (specify): No

Number of floors below grade: 1 (full basement / crawl space / slab on grade)

Number of floors at or above grade: 1

Depth of basement below grade surface: _____ ft. Basement size: _____ ft²

Basement floor construction: concrete / dirt / floating / stone / other (specify): Some dirt

Foundation walls: poured concrete / cinder blocks / stone / other (specify): _____

Basement sump present? (Yes) / No Sump pump? Yes / (No) Water in sump? Yes / (No)

Type of heating system (circle all that apply):

| | | | |
|------------------------|----------------------------|-----------------|--------------------|
| hot air circulation | hot air radiation | wood | steam radiation |
| heat pump | <u>hot water radiation</u> | kerosene heater | electric baseboard |
| other (specify): _____ | | | |

Type of ventilation system (circle all that apply):

| | | |
|--|------------------------|--|
| central air conditioning | mechanical fans | bathroom ventilation fans individual air |
| <u>2 - window air conditioning units</u> | kitchen range hood fan | outside air intake |
| other (specify): _____ | | |

Type of fuel utilized (circle all that apply):

Natural gas / electric / fuel oil / wood / coal / solar / kerosene

Are the basement walls or floor sealed with waterproof paint or epoxy coatings?

Yes / (No)

Is there a whole house fan?

Yes / No *attic*

Septic system?

Yes / Yes (but not used) / No

Irrigation/private well?

Yes / Yes (but not used) / No

Type of ground cover outside of building: grass / concrete / asphalt / other (specify) _____

Existing subsurface depressurization (radon) system in place? Yes No active / passive

Sub-slab vapor/moisture barrier in place? Yes No

Type of barrier: _____

Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): _____

Heavy vehicular traffic nearby (or other mobile sources): _____

Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources | Location(s) | Removed (Yes / No / NA) |
|--------------------------------------|---------------------------------|----------------------------|
| Gasoline storage cans | . | |
| Gas-powered equipment | | |
| Kerosene storage cans | | |
| Paints / thinners / strippers | <i>random - small on ledges</i> | |
| <u>Cleaning solvents</u> | . | |
| Oven cleaners | | |
| <u>Carpet / upholstery cleaners</u> | | |
| Other house cleaning products | | |
| Moth balls | | |
| Polishes / waxes | | |
| Insecticides | | |
| Furniture / floor polish | | |
| Nail polish / polish remover | | |
| Hairspray | | |
| Cologne / perfume | | |
| Air fresheners | | |
| Fuel tank (inside building) | | NA |
| Wood stove or fireplace | | NA |
| New furniture / upholstery | | |
| New carpeting / flooring | | NA |
| <u>Hobbies - glues, paints, etc.</u> | | |

Part V – Miscellaneous Items

Do any occupants of the building smoke? Yes / No How often? _____

Last time someone smoked in the building? _____ hours / days ago

Does the building have an attached garage directly connected to living space? Yes / No

If so, is a car usually parked in the garage? Yes / No

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? Yes / No

Do the occupants of the building have their clothes dry cleaned? Yes No

If yes, how often? weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? Yes / No

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Yes / No

Have any pesticides/herbicides been applied around the building or in the yard? Yes / No

If so, when and which chemicals? May 6, 2020

Has there ever been a fire in the building? Yes / No If yes, when? _____

Has painting or staining been done in the building in the last 6 months? Yes / No

If yes, when _____ and where? _____

Part VI – Sampling Information

Sample Technician: _____ Phone number: () _____ - _____

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

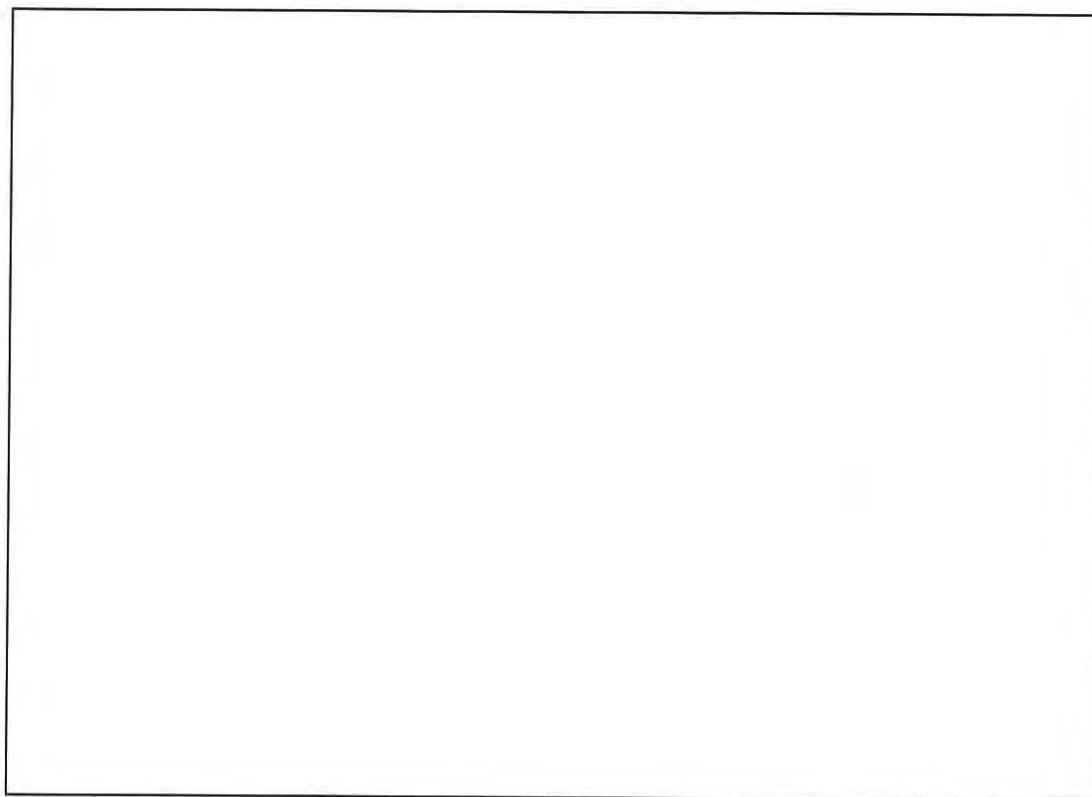
Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: _____

Sample locations (floor, room):

Field ID # _____ - _____ Field ID # _____ - _____

Field ID # _____ - _____ Field ID # _____ - _____

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event? *Yes / No*

Describe the general weather conditions: _____

Part VIII – General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

Plus { *Kozak - Dry Cleaning - S. Otto Street near Assembly of God church*
Cleaners *- was 1st house north on East side*
Homeowner has not been in basement for 30 years.

INDOOR AIR BUILDING SURVEY
AND SAMPLING FORM

Preparer's name: Bethany Gatz Date: June 2, 2020
Preparer's affiliation: Tetra Tech Phone #: _____
Site Name: TCE Clinton Engines Project #: _____

Part I - Occupants

Building Address: [redacted] S Clark St.
Property Contact: [redacted] Owner / Renter / other: _____
Contact's Phone: home () _____ work () _____ cell [redacted]
of Building occupants: Adults 1 Other _____

Part II - Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial

Describe building: 1 1/2 story - tan Year constructed: 2008

Sensitive population: day care / nursing home / hospital / school / other (specify): NA

Number of floors below grade: 1 (full basement / crawl space / slab on grade)

Number of floors at or above grade: 1-1/2

Depth of basement below grade surface: 0 ft. Basement size: _____ ft²

Basement floor construction: concrete / dirt / floating / stone / other (specify): _____

Foundation walls: poured concrete / cinder blocks / stone / other (specify): _____

Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No

Type of heating system (circle all that apply):

| | | | |
|------------------------------------|---------------------|-----------------|--------------------|
| hot air circulation | hot air radiation | wood | steam radiation |
| <u>heat pump</u> <u>geothermal</u> | hot water radiation | kerosene heater | electric baseboard |
| other (specify): _____ | | | |

Type of ventilation system (circle all that apply):

| | | | |
|---------------------------------|------------------------|---------------------------|----------------|
| <u>central air conditioning</u> | mechanical fans | bathroom ventilation fans | individual air |
| window air conditioning units | kitchen range hood fan | outside air intake | |
| other (specify): _____ | | | |

Type of fuel utilized (circle all that apply):

Natural gas electric / fuel oil / wood / coal / solar / kerosene

Are the basement walls or floor sealed with waterproof paint or epoxy coatings? Yes / No

Is there a whole house fan? *Yes / No*

Septic system? *Yes / Yes (but not used) / No*

Irrigation/private well? *Yes / Yes (but not used) / No*

Type of ground cover outside of building: *grass / concrete / asphalt / other (specify) _____*

Existing subsurface depressurization (radon) system in place? *Yes / No* *active / passive*

Sub-slab vapor/moisture barrier in place? *(Yes) / No*

Type of barrier: *Radon barrier* *4" slab* *2" pea gravel* *barrier* *8" gravel*

Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): _____

Heavy vehicular traffic nearby (or other mobile sources): _____

Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources | Location(s) | Removed (Yes / No / NA) |
|-------------------------------|-------------|----------------------------|
| Gasoline storage cans | | |
| Gas-powered equipment | | |
| Kerosene storage cans | | |
| Paints / thinners / strippers | | |
| Cleaning solvents | | |
| Oven cleaners | | |
| Carpet / upholstery cleaners | | |
| Other house cleaning products | | |
| Moth balls | | |
| Polishes / waxes | | |
| Insecticides | | |
| Furniture / floor polish | | |
| Nail polish / polish remover | | |
| Hairspray | | |
| Cologne / perfume | | |
| Air fresheners | | |
| Fuel tank (inside building) | | NA |
| Wood stove or fireplace | | NA |
| New furniture / upholstery | | |
| New carpeting / flooring | | NA |
| Hobbies - glues, paints, etc. | | |

Part V – Miscellaneous Items

Do any occupants of the building smoke? Yes / No How often? _____

Last time someone smoked in the building? _____ hours / days ago

Does the building have an attached garage directly connected to living space? Yes / No

If so, is a car usually parked in the garage? Yes / No

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? Yes / No

Do the occupants of the building have their clothes dry cleaned? Yes / No

If yes, how often? weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? Yes / No

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Yes / No

Have any pesticides/herbicides been applied around the building or in the yard? Yes / No

If so, when and which chemicals? _____

Has there ever been a fire in the building? Yes / No If yes, when? _____

Has painting or staining been done in the building in the last 6 months? Yes / No

If yes, when _____ and where? _____

Part VI – Sampling Information

Sample Technician: _____ Phone number: () _____ - _____

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

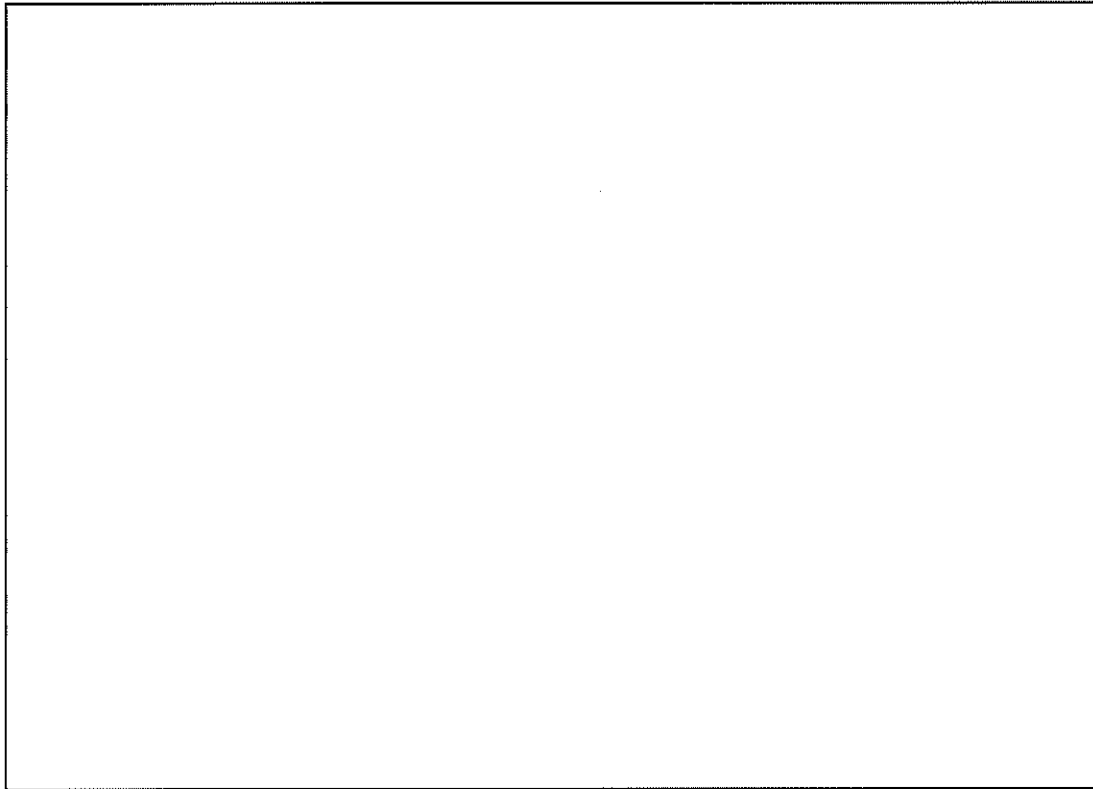
Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: _____

Sample locations (floor, room):

Field ID # 6 - Outside-ambient Field ID # _____ - _____

Field ID # 7 - living room Field ID # _____ - _____

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event? Yes / No

Describe the general weather conditions: Sunny, hot

Part VIII – General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

Rain in the morning. Ambient air sample was wet.

INDOOR AIR BUILDING SURVEY
AND SAMPLING FORM

Preparer's name: Bethany Gatz Date: June 2, 2020
Preparer's affiliation: Tetra Tech Phone #: _____
Site Name: TCE Clinton Engines Project #: _____

Part I - Occupants

Building Address: [REDACTED] E Maple Street
Property Contact: [REDACTED] Owner / Renter / other: _____
Contact's Phone: home () _____ work () _____ cell [REDACTED]
of Building occupants: Adults 1 Other _____

Part II - Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial

Describe building: 1 story Year constructed: _____

Sensitive population: day care / nursing home / hospital / school / other (specify): NA

Number of floors below grade: 1 (full basement) / crawl space / slab on grade)

Number of floors at or above grade: 1

Depth of basement below grade surface: 10 ft. Basement size: _____ ft²

Basement floor construction: concrete / dirt / floating / stone / other (specify): _____

Foundation walls: poured concrete / cinder blocks / stone / other (specify): _____

Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No

Type of heating system (circle all that apply):

| | | | |
|----------------------------|---------------------|-----------------|--------------------|
| <u>hot air circulation</u> | hot air radiation | wood | steam radiation |
| heat pump | hot water radiation | kerosene heater | electric baseboard |
| other (specify): _____ | | | |

Type of ventilation system (circle all that apply):

| | | | |
|---------------------------------|------------------------|---------------------------|----------------|
| <u>central air conditioning</u> | mechanical fans | bathroom ventilation fans | individual air |
| window air conditioning units | kitchen range hood fan | outside air intake | |
| other (specify): _____ | | | |

Type of fuel utilized (circle all that apply):

Natural gas / electric / fuel oil / wood / coal / solar / kerosene

Are the basement walls or floor sealed with waterproof paint or epoxy coatings?

Yes / No

Is there a whole house fan? Yes / No

Septic system? Yes / Yes (but not used) / No

Irrigation/private well? Yes / Yes (but not used) / No

Type of ground cover outside of building: grass / concrete / asphalt / other (specify) _____

Existing subsurface depressurization (radon) system in place? Yes / No , active / passive

Sub-slab vapor/moisture barrier in place? Yes / No

Type of barrier: _____

Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): NA

Heavy vehicular traffic nearby (or other mobile sources): NA

Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources | Location(s) | Removed (Yes / No / NA) |
|-------------------------------|-------------|----------------------------|
| Gasoline storage cans | | |
| Gas-powered equipment | | |
| Kerosene storage cans | | |
| Paints / thinners / strippers | | |
| Cleaning solvents | | |
| Oven cleaners | | |
| Carpet / upholstery cleaners | | |
| Other house cleaning products | | |
| Moth balls | | |
| Polishes / waxes | | |
| Insecticides | | |
| Furniture / floor polish | | |
| Nail polish / polish remover | | |
| Hairspray | | |
| Cologne / perfume | | |
| Air fresheners | | |
| Fuel tank (inside building) | | NA |
| Wood stove or fireplace | | NA |
| New furniture / upholstery | | |
| New carpeting / flooring | | NA |
| Hobbies - glues, paints, etc. | | |

Part V – Miscellaneous Items

Do any occupants of the building smoke? Yes / No How often? _____

Last time someone smoked in the building? _____ hours / days ago

Does the building have an attached garage directly connected to living space? Yes / No

If so, is a car usually parked in the garage? Yes / No

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? Yes / No

Do the occupants of the building have their clothes dry cleaned? Yes / No

If yes, how often? _____ weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? Yes / No

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Yes / No

Have any pesticides/herbicides been applied around the building or in the yard? Yes / No

If so, when and which chemicals? _____

Has there ever been a fire in the building? Yes / No If yes, when? _____

Has painting or staining been done in the building in the last 6 months? Yes / No

If yes, when _____ and where? _____

Part VI – Sampling Information

Sample Technician: _____ Phone number: () _____ - _____

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

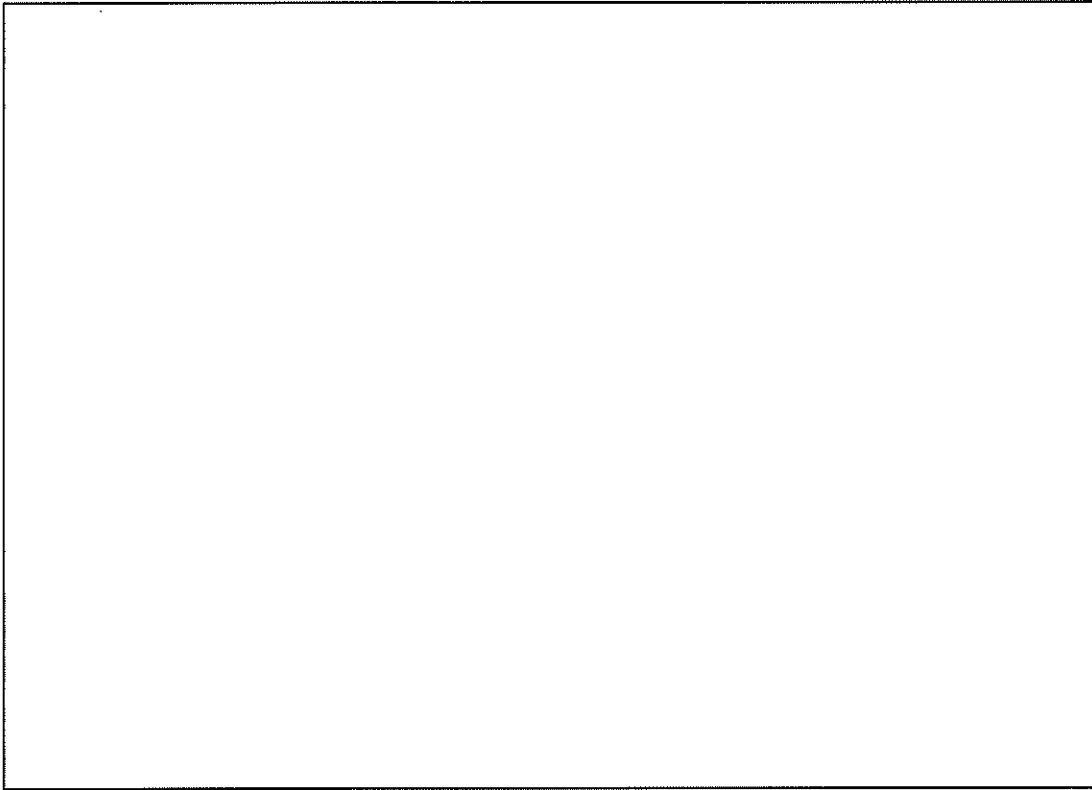
Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: _____

Sample locations (floor, room): basement, main area

Field ID # _____ - _____ Field ID # _____ - _____

Field ID # _____ - _____ Field ID # _____ - _____

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event?

rain morning
6/3/20
☒ Yes ☐ No

Describe the general weather conditions: clear, hot

Part VIII – General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

INDOOR AIR BUILDING SURVEY
AND SAMPLING FORM

Preparer's name: Yvonne M. Smith Date: 7/20/2020
Preparer's affiliation: USEPA RT OSC Phone #: 913-551-7795
Site Name: TCE - Clinton Engines Site Project #: _____

Part I - Occupants

Building Address: [REDACTED] E. Maple
Property Contact: [REDACTED] (Owner) / Renter / other: _____
Contact's Phone: home () _____ work () _____ cell [REDACTED]
of Building occupants: Adults 4 Other (Parent + 2 Adult children)

Part II - Building Characteristics

Building type: (residential) / multi-family residential / office / strip mall / commercial / industrial
Describe building: 2 story w/ attic Year constructed: _____
Sensitive population: day care / nursing home / hospital / school / other (specify): sleeping quarters for son (20yrs).
Number of floors below grade: 1 (full basement / crawl space / slab on grade)
Number of floors at or above grade: 2
Depth of basement below grade surface: _____ ft. Basement size: _____ ft²
Basement floor construction: concrete / dirt / floating / stone / other (specify): _____
Foundation walls: poured concrete / cinder blocks / stone / other (specify) _____
Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No
Type of heating system (circle all that apply):
hot air circulation hot air radiation wood steam radiation
heat pump hot water radiation kerosene heater electric baseboard
other (specify): _____
Type of ventilation system (circle all that apply):
central air conditioning mechanical fans bathroom ventilation fans individual air
window air conditioning units kitchen range hood fan outside air intake
other (specify): _____
Type of fuel utilized (circle all that apply):
Natural gas electric / fuel oil / wood / coal / solar / kerosene
Are the basement walls or floor sealed with waterproof paint or epoxy coatings? Yes / No

Is there a whole house fan? Yes / No

Septic system? Yes / Yes (but not used) / No

Irrigation/private well? Yes / Yes (but not used) / No

Type of ground cover outside of building: grass / concrete / asphalt / other (specify) _____

Existing subsurface depressurization (radon) system in place? Yes / No active / passive

Sub-slab vapor/moisture barrier in place? Yes / No

Type of barrier: _____

Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): _____

Heavy vehicular traffic nearby (or other mobile sources): _____

Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources | Location(s) | Removed (Yes / No / NA) |
|--------------------------------------|-------------------------------------|----------------------------|
| Gasoline storage cans | | |
| Gas-powered equipment | | |
| Kerosene storage cans | | |
| Paints / thinners / strippers | <u>basement in bedroom (sealed)</u> | <u>No</u> |
| <u>Cleaning solvents</u> | | |
| Oven cleaners | | |
| <u>Carpet / upholstery cleaners</u> | | |
| Other house cleaning products | | |
| Moth balls | | |
| Polishes / waxes | | |
| Insecticides | | |
| Furniture / floor polish | | |
| Nail polish / polish remover | | |
| Hairspray | | |
| Cologne / perfume | | |
| Air fresheners | | |
| Fuel tank (inside building) | | NA |
| Wood stove or fireplace | | NA |
| New furniture / upholstery | | |
| New carpeting / flooring | | NA |
| <u>Hobbies - glues, paints, etc.</u> | | |

Part V – Miscellaneous Items

Do any occupants of the building smoke? Yes / No How often? _____

Last time someone smoked in the building? _____ hours / days ago

Does the building have an attached garage directly connected to living space? No / ~~Yes~~

If so, is a car usually parked in the garage? Yes / No

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? Yes / No

Do the occupants of the building have their clothes dry cleaned? Yes / No

If yes, how often? _____ weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? Yes / No

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Yes / No

Have any pesticides/herbicides been applied around the building or in the yard? Yes / No

If so, when and which chemicals? Some herbicide - 3 weeks ago

Has there ever been a fire in the building? Yes / No If yes, when? _____

Has painting or staining been done in the building in the last 6 months? Yes / No

If yes, when upstairs bathroom and where? June 2020

Part VI – Sampling Information

Sample Technician: _____ Phone number: () _____ - _____

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

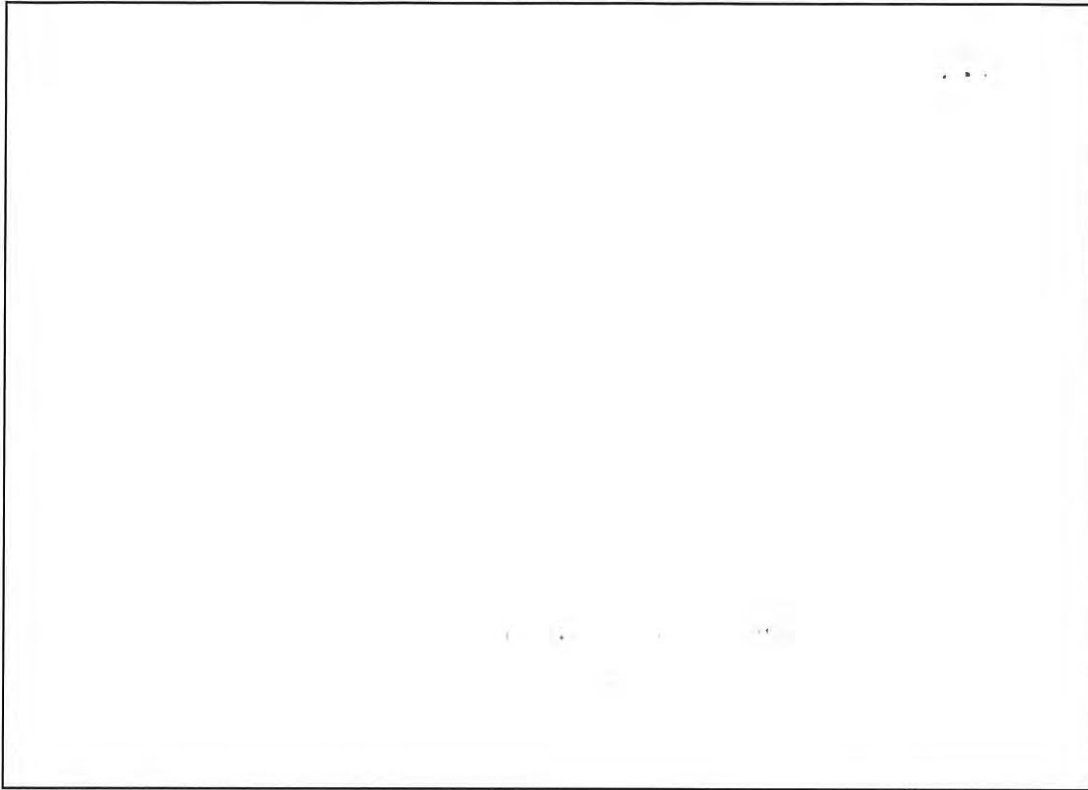
Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: _____

Sample locations (floor, room):

Field ID # _____ - _____ Field ID # _____ - _____

Field ID # _____ - _____ Field ID # _____ - _____

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event? Yes / No

Describe the general weather conditions: Light drizzle

Part VIII – General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

Wife - 49 years
Children - 22 years and 20 years
Son has bedroom in basement.

INDOOR AIR BUILDING SURVEY
AND SAMPLING FORM

Preparer's name: Darrell D. Brauer Yvonne M. Smith Date: 7/20/20
Preparer's affiliation: USEPA R7 OSC Phone #: 563-249-7139
Site Name: TCE - Clinton Engines Project #: _____

Part I - Occupants

Building Address: [REDACTED] E. Maple Street
Property Contact: [REDACTED] Owner ☒ Renter ☐ other: _____
Contact's Phone: home () _____ work () _____ cell [REDACTED]
of Building occupants: Adults 2 Other _____

Part II - Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial
Describe building: Residential / attached to business Year constructed: _____

Sensitive population: day care / nursing home / hospital / school / other (specify): None

Number of floors below grade: 0 (full basement / crawl space / slab on grade)

Number of floors at or above grade: 1

Depth of basement below grade surface: NA ft. Basement size: _____ ft²

Basement floor construction: concrete / dirt / floating / stone / other (specify): NA

Foundation walls: poured concrete / cinder blocks / stone / other (specify): NA

Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No

Type of heating system (circle all that apply):

| | | | |
|------------------------|----------------------------|-----------------|--------------------|
| hot air circulation | hot air radiation | wood | steam radiation |
| heat pump | <u>hot water radiation</u> | kerosene heater | electric baseboard |
| other (specify): _____ | | | |

Type of ventilation system (circle all that apply):

| | | |
|--------------------------------------|------------------------|--|
| central air conditioning | mechanical fans | bathroom ventilation fans individual air |
| <u>window air conditioning units</u> | kitchen range hood fan | outside air intake |
| other (specify): _____ | | |

Type of fuel utilized (circle all that apply):

Natural gas / electric / fuel oil / wood / coal / solar / kerosene

Are the basement walls or floor sealed with waterproof paint or epoxy coatings? Yes / No NA

Is there a whole house fan? Yes / No

Septic system? Yes / Yes (but not used) / No

Irrigation/private well? Yes / Yes (but not used) / No

Type of ground cover outside of building: grass / concrete / asphalt / other (specify) _____

Existing subsurface depressurization (radon) system in place? Yes / No active / passive

Sub-slab vapor/moisture barrier in place? Yes / No

Type of barrier: _____

Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): rebuilds lawnmowers

Heavy vehicular traffic nearby (or other mobile sources): on a main road w/ medium traffic next to tank farm

Part IV - Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources | Location(s) | Removed (Yes / No / NA) |
|-------------------------------|--|----------------------------|
| Gasoline storage cans | * outside at entry of property (not house) | No |
| Gas-powered equipment | lawnmowers on yard | No |
| Kerosene storage cans | | |
| Paints / thinners / strippers | outside at entry of property | No |
| Cleaning solvents | | |
| Oven cleaners | | |
| Carpet / upholstery cleaners | | |
| Other house cleaning products | | |
| Moth balls | | |
| Polishes / waxes | | |
| Insecticides | | |
| Furniture / floor polish | | |
| Nail polish / polish remover | | |
| Hairspray | | |
| Cologne / perfume | | |
| Air fresheners | | |
| Fuel tank (inside building) | | NA |
| Wood stove or fireplace | | NA |
| New furniture / upholstery | | |
| New carpeting / flooring | | NA |
| Hobbies - glues, paints, etc. | | |

Part V – Miscellaneous Items

Do any occupants of the building smoke?

Yes / No

How often? All day / every day

Last time someone smoked in the building?

1 hours / days ago

Does the building have an attached garage directly connected to living space?

Yes / No

If so, is a car usually parked in the garage?

Yes / No

Are gas-powered equipment or cans of gasoline/fuels stored in the garage?

Yes / No

Do the occupants of the building have their clothes dry cleaned?

Yes / No

If yes, how often?

weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work?

Yes / No

If yes, what types of solvents are used?

unknown, various

If yes, are their clothes washed at work?

Yes / No

Have any pesticides/herbicides been applied around the building or in the yard?

Yes / No

If so, when and which chemicals?

Has there ever been a fire in the building?

Yes / No

If yes, when? unknown

Has painting or staining been done in the building in the last 6 months?

Yes / No

If yes, when _____

and where? _____

Part VI – Sampling Information

Sample Technician: _____ Phone number: () _____ - _____

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

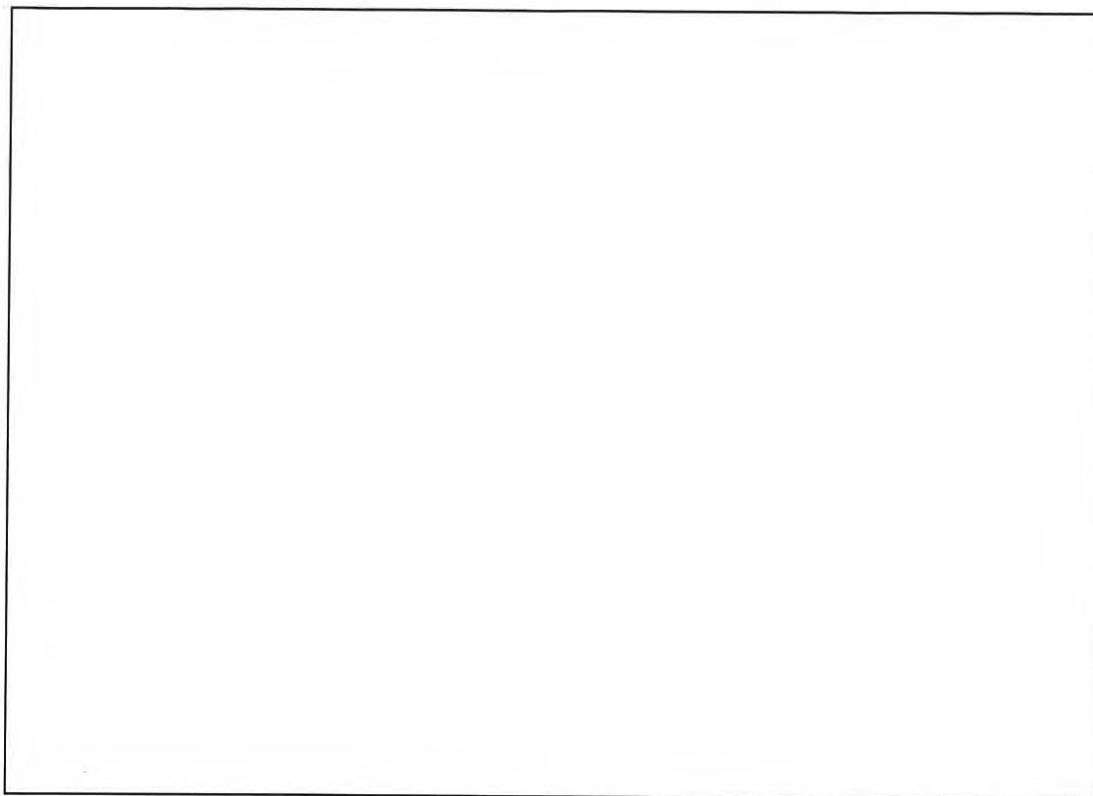
Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: _____

Sample locations (floor, room):

Field ID # _____ - _____ Field ID # _____ - _____

Field ID # _____ - _____ Field ID # _____ - _____

21010-295-185-807-01000 12001
Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event? Yes ☒ No

Describe the general weather conditions: Light drizzle

Part VIII - General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

Mr. Brauer maintains a lot of lawnmowers on property. He believes there is an old cistern (sink hole) at NE corner of lot that he keeps filling in.

INDOOR AIR BUILDING SURVEY
AND SAMPLING FORM

Preparer's name: Yvonne M. Smith Date: 7/20/20
Preparer's affiliation: VSEPA Phone #: 913-551-7795
Site Name: TCE - Clinton Engines Project #: _____

Part I - Occupants

Building Address: [redacted] E. Made
Property Contact: [redacted] Owner / Renter / other: _____
Contact's Phone: home () _____ work () _____ cell [redacted]
of Building occupants: Adults 2 Other _____

Part II - Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial
Describe building: 1 story building (original foundation) Year constructed: 1950s?

Sensitive population: day care / nursing home / hospital / school / other (specify): NA

Number of floors below grade: _____ (full basement / crawl space / slab on grade)

Number of floors at or above grade: 1

Depth of basement below grade surface: _____ ft. Basement size: _____ ft²

Basement floor construction: concrete / dirt / floating / stone / other (specify): _____

Foundation walls: poured concrete / cinder blocks / stone / other (specify): _____

Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No

Type of heating system (circle all that apply):

hot air circulation hot air radiation wood steam radiation
heat pump hot water radiation kerosene heater electric baseboard
other (specify): _____

Type of ventilation system (circle all that apply):

central air conditioning mechanical fans bathroom ventilation fans individual air
window air conditioning units kitchen range hood fan outside air intake
other (specify): _____

Type of fuel utilized (circle all that apply):

Natural gas / electric / fuel oil / wood / coal / solar / kerosene

Are the basement walls or floor sealed with waterproof paint or epoxy coatings? Yes / No NA

} partial,
part of add
on where
vehicles are
kept.

NA

Is there a whole house fan?

Yes / No

Septic system?

Yes / Yes (but not used) / No

Irrigation/private well?

Yes / Yes (but not used) / No

Type of ground cover outside of building: grass / concrete / asphalt / other (specify) _____

Existing subsurface depressurization (radon) system in place? Yes / No active / passive

Sub-slab vapor/moisture barrier in place?

Yes / No

Type of barrier: _____

Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): h

Heavy vehicular traffic nearby (or other mobile sources): on a main road / medium traffic

Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources | Location(s) | Removed (Yes / No / NA) |
|--------------------------------------|---|----------------------------|
| Gasoline storage cans | <u>Building (various)</u> | <u>Yes</u> |
| Gas-powered equipment | <u>Boat / lawnmowers (boat not removed)</u> | <u>Yes</u> |
| Kerosene storage cans | | |
| Paints / thinners / strippers | <u>1</u> | <u>Yes</u> |
| <u>Cleaning solvents</u> | | |
| Oven cleaners | | |
| <u>Carpet / upholstery cleaners</u> | | |
| Other house cleaning products | | |
| Moth balls | | |
| Polishes / waxes | | |
| Insecticides | | |
| Furniture / floor polish | | |
| Nail polish / polish remover | | |
| Hairspray | | |
| Cologne / perfume | | |
| Air fresheners | | |
| Fuel tank (inside building) | | NA |
| Wood stove or fireplace | | NA |
| New furniture / upholstery | | |
| New carpeting / flooring | | NA |
| <u>Hobbies - glues, paints, etc.</u> | | <u>Yes</u> |

Part V – Miscellaneous Items

Do any occupants of the building smoke? Yes / No How often? _____

Last time someone smoked in the building? _____ hours / days ago

Does the building have an attached garage directly connected to living space? Yes / No

If so, is a car usually parked in the garage? Yes / No N/A

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? Yes / No

Do the occupants of the building have their clothes dry cleaned? Yes / No

If yes, how often? weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? Yes / No

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Yes / No

Have any pesticides/herbicides been applied around the building or in the yard? Yes / No

If so, when and which chemicals? _____

Has there ever been a fire in the building? Yes / No If yes, when? _____

Has painting or staining been done in the building in the last 6 months? Yes / No

If yes, when _____ and where? _____

Part VI – Sampling Information

Sample Technician: _____ Phone number: () _____ - _____

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

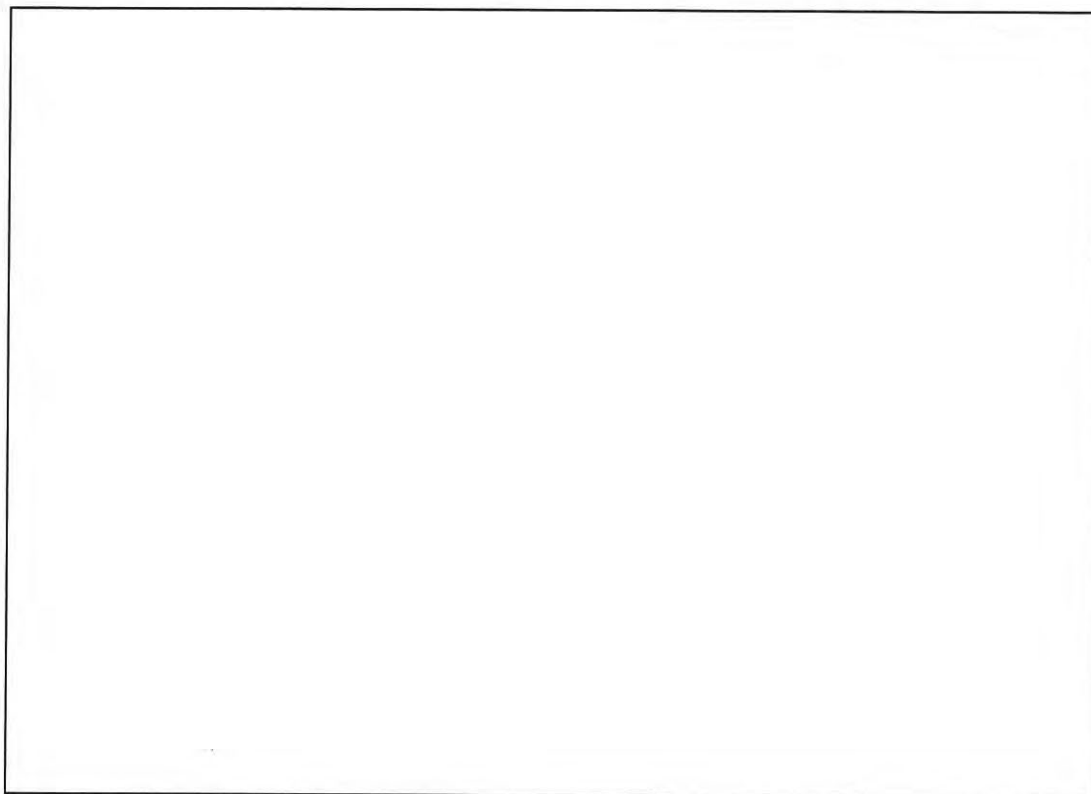
Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: _____

Sample locations (floor, room):

Field ID # _____ - _____ Field ID # _____ - _____

Field ID # _____ - _____ Field ID # _____ - _____

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event? Yes / No

Describe the general weather conditions: Light drizzle

Part VIII – General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

Owner is concerned his property may be on the plume. Mice & rodents never enter this building and there are various areas on property where grass is discolored or can't grow.

INDOOR AIR BUILDING SURVEY
AND SAMPLING FORM

Preparer's name: Bethany Gatz Date: 7/22/20
Preparer's affiliation: Tetra Tech Inc Phone #: _____
Site Name: TCE-Clinton Engines Project #: _____

Part I - Occupants

Building Address: 802 E Maple Street
Property Contact: City of Mapleville (Electric) Owner/ Renter / other: _____
Contact's Phone: home [REDACTED] work () _____ cell () _____
of Building occupants: Adults _____ Other _____ business

Part II - Building Characteristics

Building type: residential / multi-family residential (office) strip mall / commercial / industrial
Describe building: 1-story large industrial office/garage w/ metal corrugated siding Year constructed: _____
Sensitive population: day care / nursing home / hospital / school / other (specify): NA
☒ Number of floors below grade: 0 (full basement / crawl space / slab on grade)
☒ Number of floors at or above grade: 1
☒ Depth of basement below grade surface: _____ ft. Basement size: _____ ft²
☒ Basement floor construction: concrete / dirt / floating / stone / other (specify): _____
Foundation walls: poured concrete / cinder blocks / stone / other (specify) _____
☒ Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No

Type of heating system (circle all that apply):

| | | | |
|----------------------------|---------------------|-----------------|--------------------|
| <u>hot air circulation</u> | hot air radiation | wood | steam radiation |
| heat pump | hot water radiation | kerosene heater | electric baseboard |
| other (specify): _____ | | | |

Type of ventilation system (circle all that apply):

| | | | |
|---------------------------------|------------------------|---------------------------|----------------|
| <u>central air conditioning</u> | mechanical fans | bathroom ventilation fans | individual air |
| window air conditioning units | kitchen range hood fan | outside air intake | |
| other (specify): _____ | | | |

Type of fuel utilized (circle all that apply):

Natural gas / electric / fuel oil / wood / coal / solar / kerosene

☒ Are the basement walls or floor sealed with waterproof paint or epoxy coatings? Yes / No

Is there a whole house fan? Yes / No

Septic system? Yes / Yes (but not used) / No

Irrigation/private well? Yes / Yes (but not used) / No

Type of ground cover outside of building: grass / concrete / asphalt / other (specify) _____

Existing subsurface depressurization (radon) system in place? Yes / No active / passive

Sub-slab vapor/moisture barrier in place? Yes / No
 Type of barrier: _____

Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): NA

Heavy vehicular traffic nearby (or other mobile sources): NA

Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources | Location(s) | Removed (Yes / No / NA) |
|--------------------------------------|-------------------------------------|----------------------------|
| Gasoline storage cans | <u>in garage not stored indoors</u> | |
| Gas-powered equipment | | |
| Kerosene storage cans | | |
| Paints / thinners / strippers | | |
| <u>Cleaning solvents</u> | | |
| Oven cleaners | | |
| <u>Carpet / upholstery cleaners</u> | | |
| Other house cleaning products | | |
| Moth balls | | |
| Polishes / waxes | | |
| Insecticides | | |
| Furniture / floor polish | | |
| Nail polish / polish remover | | |
| Hairspray | | |
| Cologne / perfume | | |
| Air fresheners | | |
| Fuel tank (inside building) | | NA |
| Wood stove or fireplace | | NA |
| New furniture / upholstery | | |
| New carpeting / flooring | | NA |
| <u>Hobbies - glues, paints, etc.</u> | | |

Part V – Miscellaneous Items

Do any occupants of the building smoke? Yes / No *Not in building* How often? _____

Last time someone smoked in the building? _____ hours / days ago

Does the building have an attached garage directly connected to living space? Yes / No *office*

If so, is a car usually parked in the garage? Yes / No

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? Yes / No *just a few cans*

Do the occupants of the building have their clothes dry cleaned? Yes / No

If yes, how often? _____ weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? Yes / No

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Yes / No

Have any pesticides/herbicides been applied around the building or in the yard? Yes / No

If so, when and which chemicals? _____

Has there ever been a fire in the building? Yes / No If yes, when? _____

Has painting or staining been done in the building in the last 6 months? Yes / No *Painted Dec. 2019 (7 mos)*

If yes, when _____ and where? _____

Part VI – Sampling Information

Sample Technician: _____ Phone number: () _____ - _____

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

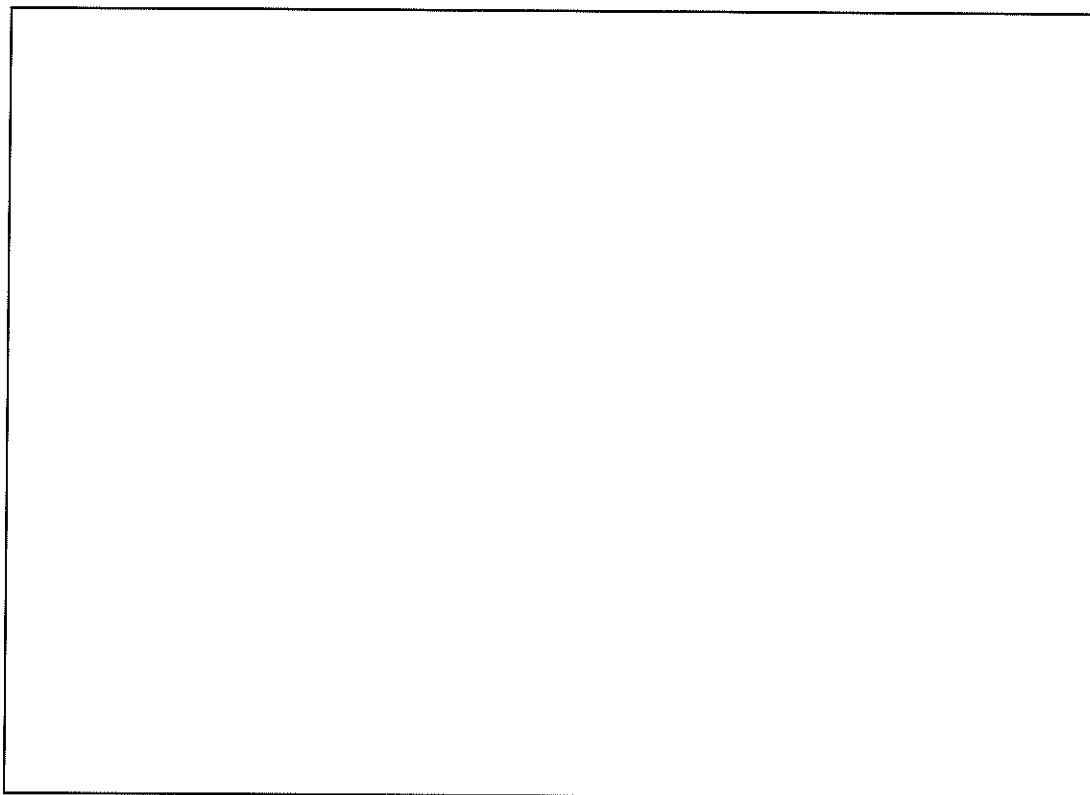
Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: _____

Sample locations (floor, room):

Field ID # _____ - _____ Field ID # _____ - _____

Field ID # _____ - _____ Field ID # _____ - _____

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event? *Yes / No*

Describe the general weather conditions: _____

Part VIII – General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

INDOOR AIR BUILDING SURVEY AND SAMPLING FORM

Preparer's name: Bethany Gatz Date: 7/20/2020
 Preparer's affiliation: TetraTech Phone #: _____
 Site Name: TCE- Clinton Engines Site Project #: _____

Part I - Occupants

Building Address: [REDACTED] E maple St.
 Property Contact: [REDACTED] Owner / Renter / other: _____
 Contact's Phone: home () _____ work () _____ cell [REDACTED]
 # of Building occupants: Adults 1 Other _____

Part II - Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial

Describe building: 1 story metal siding Year constructed: _____

Sensitive population: day care / nursing home / hospital / school / other (specify): NA

Number of floors below grade: 0 (full basement / crawl space / slab on grade)

Number of floors at or above grade: 1

X Depth of basement below grade surface: _____ ft. Basement size: _____ ft²

X Basement floor construction: concrete / dirt / floating / stone / other (specify): _____

X Foundation walls: poured concrete / cinder blocks / stone / other (specify): _____

✓ Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No

Type of heating system (circle all that apply):

hot air circulation hot air radiation wood steam radiation
 heat pump hot water radiation kerosene heater electric baseboard
 other (specify): _____

Type of ventilation system (circle all that apply):

central air conditioning mechanical fans bathroom ventilation fans individual air
 window air conditioning units kitchen range hood fan outside air intake
 other (specify): residence shop

Type of fuel utilized (circle all that apply):

Natural gas electric fuel oil / wood / coal / solar / kerosene

X Are the basement walls or floor sealed with waterproof paint or epoxy coatings? Yes / No

Is there a whole house fan?

Yes / No

Septic system?

~~Yes~~ / Yes (but not used) / No

Irrigation/private well?

Yes / Yes (but not used) / No

Type of ground cover outside of building: grass / concrete / asphalt / other (specify) _____

Existing subsurface depressurization (radon) system in place? Yes No active / passive

Sub-slab vapor/moisture barrier in place? Yes No

Type of barrier: _____

Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): NA

Heavy vehicular traffic nearby (or other mobile sources): NA

Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources | Location(s) | Removed (Yes / No / NA) |
|--------------------------------------|---|----------------------------|
| Gasoline storage cans | <u>shop area (opposite side of living area)</u> | <u>NO</u> |
| Gas-powered equipment | | |
| Kerosene storage cans | | |
| Paints / thinners / strippers | | |
| <u>Cleaning solvents</u> | | |
| Oven cleaners | | |
| <u>Carpet / upholstery cleaners</u> | | |
| Other house cleaning products | | |
| Moth balls | | |
| Polishes / waxes | | |
| Insecticides | | |
| Furniture / floor polish | | |
| Nail polish / polish remover | | |
| Hairspray | | |
| Cologne / perfume | | |
| Air fresheners | | |
| Fuel tank (inside building) | | NA |
| Wood stove or fireplace | | NA |
| New furniture / upholstery | | |
| New carpeting / flooring | | NA |
| <u>Hobbies - glues, paints, etc.</u> | | |

Part V – Miscellaneous Items

Do any occupants of the building smoke? Yes / No How often? _____

Last time someone smoked in the building? _____ hours / days ago

Does the building have an attached garage directly connected to living space? Yes / No

If so, is a car usually parked in the garage? Yes / No

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? Yes / No

Do the occupants of the building have their clothes dry cleaned? Yes / No

If yes, how often? weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? Yes / No

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Yes / No

Have any pesticides/herbicides been applied around the building or in the yard? Yes / No

If so, when and which chemicals? _____

Has there ever been a fire in the building? Yes / No If yes, when? _____

Has painting or staining been done in the building in the last 6 months? Yes / No

If yes, when _____ and where? _____

Part VI – Sampling Information

Sample Technician: Bethany Gatz Phone number: () _____ - _____

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

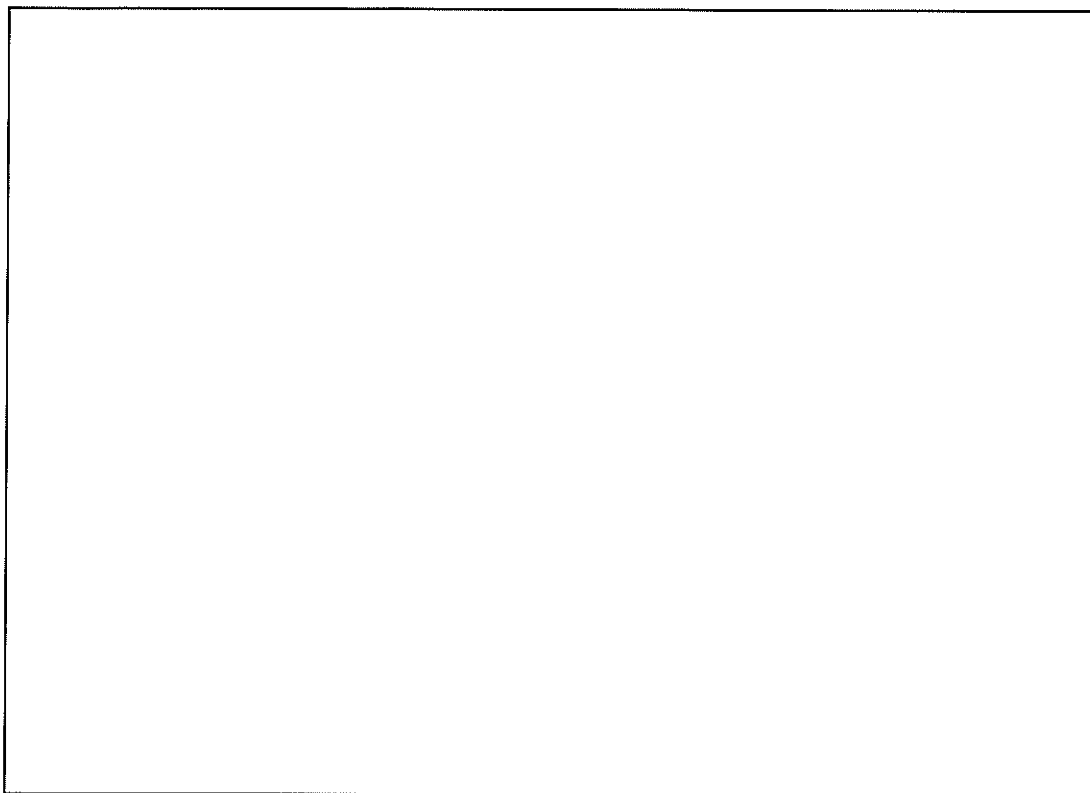
Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: _____

Sample locations (floor, room):

Field ID # 8612 - 1 (Living room) Field ID # _____ - _____

Field ID # _____ - _____ Field ID # _____ - _____

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event? Yes ☒ No

Describe the general weather conditions: clear, 87°F

Part VIII – General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

INDOOR AIR BUILDING SURVEY AND SAMPLING FORM

Preparer's name: Yvonne M. Smith Date: 7/22/2020
Preparer's affiliation: USEPA, RT0X Phone #: 913-551-7795
Site Name: TCE - Clinton Engines Project #: _____

Part I - Occupants

Building Address: [REDACTED] E. Maple St.
Property Contact: [REDACTED] Owner / Renter / other: General Manager
Contact's Phone: home () _____ work () [REDACTED]
of Building occupants: Adults 48 Other _____

Part II - Building Characteristics (on site workers ~48) 4x10 hour shifts

Building type: residential / multi-family residential / office / strip mall / commercial / industrial

Describe building: 1 story Year constructed: 1970s

Sensitive population: day care / nursing home / hospital / school / other (specify): None

Number of floors below grade: 0 (full basement / crawl space / slab on grade)

Number of floors at or above grade: 1

Depth of basement below grade surface: _____ ft. Basement size: _____ ft² NA

Basement floor construction: concrete / dirt / floating / stone / other (specify): NA

Foundation walls: poured concrete / cinder blocks / stone / other (specify): NA

Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No

Type of heating system (circle all that apply):

hot air circulation hot air radiation wood steam radiation
heat pump hot water radiation kerosene heater electric baseboard
other (specify): _____

Type of ventilation system (circle all that apply):

central air conditioning mechanical fans bathroom ventilation fans individual air
window air conditioning units kitchen range hood fan outside air intake
other (specify): _____

Type of fuel utilized (circle all that apply):

Natural gas electric / fuel oil / wood / coal / solar / kerosene

Are the basement walls or floor sealed with waterproof paint or epoxy coatings? Yes / No NA

Is there a whole house fan? Yes / No

Septic system? Yes / Yes (but not used) / No

Irrigation/private well? Yes / Yes (but not used) / No

Type of ground cover outside of building: grass / concrete / asphalt / other (specify) _____

Existing subsurface depressurization (radon) system in place? Yes / No active / passive

Sub-slab vapor/moisture barrier in place? Yes / No NA

Type of barrier: _____

Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): Farm Feed, commercial

Heavy vehicular traffic nearby (or other mobile sources): located on a main road - medium traffic

Part IV - Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources | Location(s) | Removed (Yes / No / NA) |
|--------------------------------------|---|----------------------------|
| Gasoline storage cans | | |
| Gas-powered equipment | | |
| Kerosene storage cans | | |
| Paints / thinners / strippers | <u>Paints (sealed) underneath stairwell</u> | <u>NA</u> |
| <u>Cleaning solvents</u> | | |
| Oven cleaners | | |
| <u>Carpet / upholstery cleaners</u> | | |
| Other house cleaning products | | |
| Moth balls | | |
| Polishes / waxes | | |
| Insecticides | | |
| Furniture / floor polish | | |
| Nail polish / polish remover | | |
| Hairspray | | |
| Cologne / perfume | | |
| Air fresheners | | |
| Fuel tank (inside building) | | NA |
| Wood stove or fireplace | | NA |
| New furniture / upholstery | | |
| New carpeting / flooring | | NA |
| <u>Hobbies - glues, paints, etc.</u> | | |

Part V – Miscellaneous Items

Do any occupants of the building smoke? Yes / No How often? _____

Last time someone smoked in the building? _____ hours / days ago

Does the building have an attached garage directly connected to living space? Yes / No NA

If so, is a car usually parked in the garage? Yes / No

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? Yes / No

Do the occupants of the building have their clothes dry cleaned? Yes / No

If yes, how often? weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? Yes / No

If yes, what types of solvents are used? Paints (sealed) + degreasers

If yes, are their clothes washed at work? Yes / No

Have any pesticides/herbicides been applied around the building or in the yard? Yes / No

If so, when and which chemicals? Some spray

Has there ever been a fire in the building? Yes / No If yes, when? _____

Has painting or staining been done in the building in the last 6 months? Yes / No

If yes, when _____ and where? _____

*2 months ago
latex paint
on wall labeled
"non-conforming
(south wall)"*

Part VI – Sampling Information

Sample Technician: _____ Phone number: () _____ - _____

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

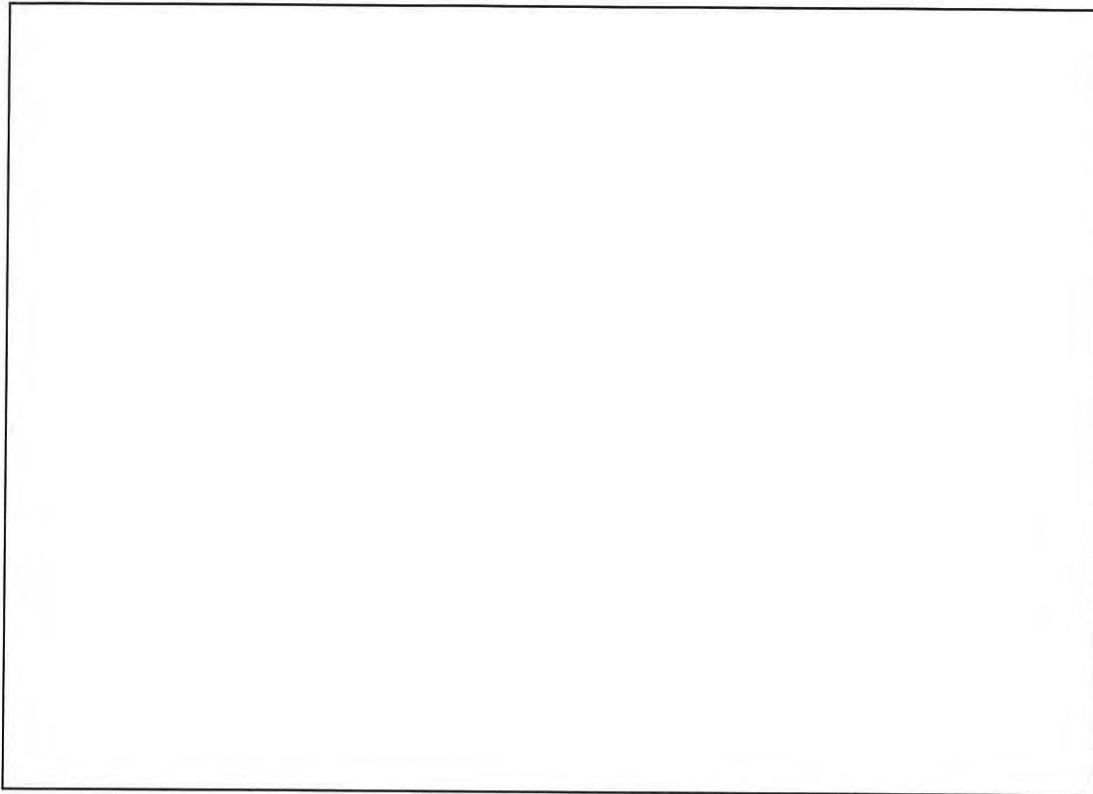
Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: _____

Sample locations (floor, room):

Field ID # _____ - _____ Field ID # _____ - _____

Field ID # _____ - _____ Field ID # _____ - _____

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event?

~~Yes~~ No

Describe the general weather conditions: Light drizzle

Part VIII – General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

Office - 2014
Shipping - past 2010 } add ons

INDOOR AIR BUILDING SURVEY
AND SAMPLING FORM

Preparer's name: Yvonne M. Smith Date: 7/20/2020
Preparer's affiliation: USEPA, RT OSC Phone #: 913-551-7795
Site Name: TCE-Clinton Engines Site Project #: _____

Part I - Occupants

Building Address: [REDACTED] S. Matteson
Property Contact: [REDACTED] ☒ Owner ☐ Renter / other: _____
Contact's Phone: home () _____ work () _____ cell [REDACTED]
of Building occupants: Adults 1 Other _____

Part II - Building Characteristics

Building type: ☒ residential / multi-family residential / office / strip mall / commercial / industrial
Describe building: 1-1/2 story w/basement Year constructed: 1900s

Sensitive population: day care / nursing home / hospital / school / other (specify): NA

Number of floors below grade: 1 (full basement / crawl space / slab on grade)

Number of floors at or above grade: 2

Depth of basement below grade surface: _____ ft. Basement size: _____ ft²

Basement floor construction: ☒ concrete ☒ dirt / floating / stone / other (specify): _____

Foundation walls: poured concrete / cinder blocks / ☒ stone other (specify): _____

Basement sump present? ☒ Yes / No Sump pump? Yes / ☒ No Water in sump? Yes / ☒ No

Type of heating system (circle all that apply):

☒ hot air circulation ☐ hot air radiation ☐ wood ☐ steam radiation
☐ heat pump ☐ hot water radiation ☐ kerosene heater ☐ electric baseboard
other (specify): _____

Type of ventilation system (circle all that apply):

☒ central air conditioning ☐ mechanical fans ☒ bathroom ventilation fans individual air
☒ window air conditioning units ☒ kitchen range hood fan outside air intake lower only
other (specify): _____

Type of fuel utilized (circle all that apply):

☒ Natural gas ☒ electric / fuel oil / wood / coal / solar / kerosene

Are the basement walls or floor sealed with waterproof paint or epoxy coatings?

Yes / ☒ No

Is there a whole house fan?

Yes / No

Septic system?

Yes / Yes (but not used) / No

Irrigation/private well?

Yes / Yes (but not used) / No

Type of ground cover outside of building: grass / concrete asphalt / other (specify) _____

Existing subsurface depressurization (radon) system in place? Yes / No active / passive

Sub-slab vapor/moisture barrier in place?

Yes / No

Type of barrier: _____

Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): _____

Heavy vehicular traffic nearby (or other mobile sources): _____

Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources | Location(s) | Removed (Yes / No / NA) |
|--------------------------------------|--------------------------------------|----------------------------|
| Gasoline storage cans | | |
| Gas-powered equipment | | |
| Kerosene storage cans | | |
| Paints / thinners / strippers | <u>sealed @ entrance of basement</u> | |
| <u>Cleaning solvents</u> | | |
| Oven cleaners | | |
| <u>Carpet / upholstery cleaners</u> | | |
| Other house cleaning products | | |
| Moth balls | | |
| Polishes / waxes | | |
| Insecticides | | |
| Furniture / floor polish | | |
| Nail polish / polish remover | | |
| Hairspray | | |
| Cologne / perfume | | |
| Air fresheners | | |
| Fuel tank (inside building) | | NA |
| Wood stove or fireplace | | NA |
| New furniture / upholstery | | |
| New carpeting / flooring | | NA |
| <u>Hobbies - glues, paints, etc.</u> | | |

Part V – Miscellaneous Items

Do any occupants of the building smoke? Yes / No How often? _____

Last time someone smoked in the building? _____ hours / days ago

Does the building have an attached garage directly connected to living space? Yes No

If so, is a car usually parked in the garage? Yes / No

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? Yes / No

Do the occupants of the building have their clothes dry cleaned? Yes No

If yes, how often? weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? Yes / No

If yes, what types of solvents are used? Metal (Webber) - ref

If yes, are their clothes washed at work? Yes / No

Have any pesticides/herbicides been applied around the building or in the yard? Yes / No

If so, when and which chemicals? _____

Has there ever been a fire in the building? Yes / No

If yes, when? Attic - more than 2 yrs + repaired + insp.

Has painting or staining been done in the building in the last 6 months? Yes / No

If yes, when _____ and where? _____

Part VI – Sampling Information

Sample Technician: _____ Phone number: () _____ - _____

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

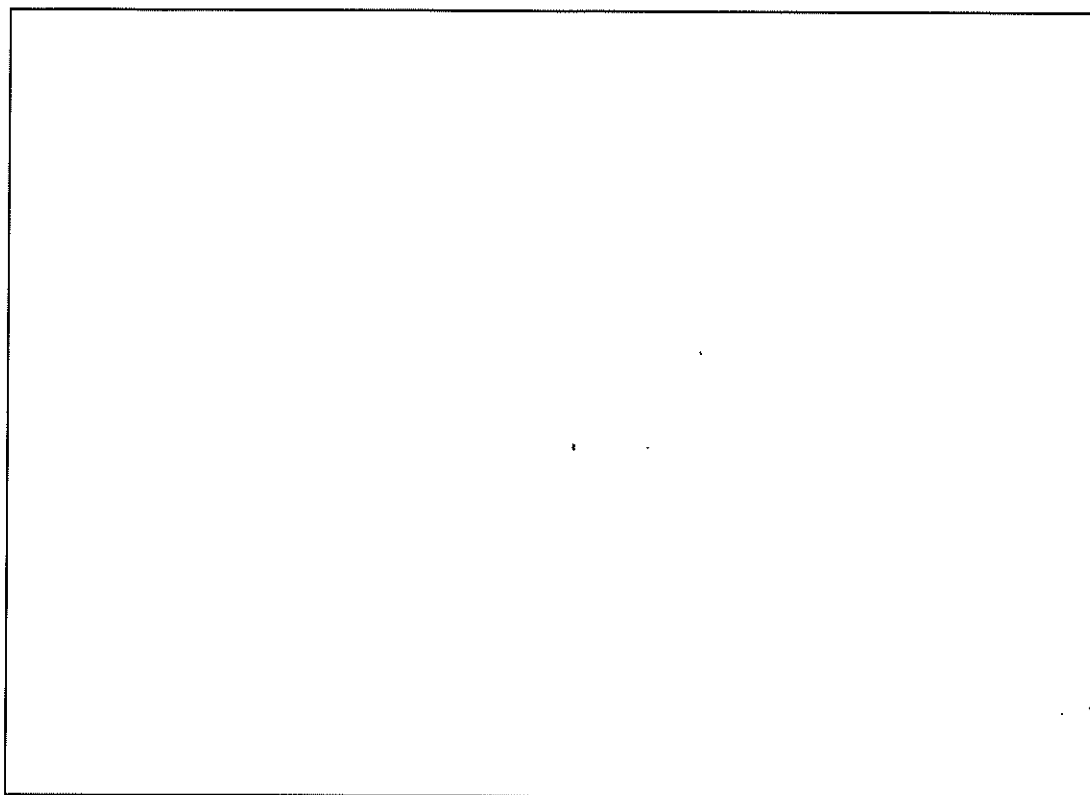
Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: _____

Sample locations (floor, room):

Field ID # _____ - _____ Field ID # _____ - _____

Field ID # _____ - _____ Field ID # _____ - _____

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event?

Yes ☒ No

Describe the general weather conditions: Light drizzle

Part VIII – General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

INDOOR AIR BUILDING SURVEY
AND SAMPLING FORM

Preparer's name: Bethany Gatz Date: _____
Preparer's affiliation: Tetra Tech Phone #: _____
Site Name: TCE Clinton Engines Project #: _____

Part I - Occupants

Building Address: [REDACTED] S Matteson St.
Property Contact: [REDACTED] Owner / Renter / other: _____
Contact's Phone: home () _____ work () _____ cell [REDACTED]
of Building occupants: Adults _____ Other _____

Part II - Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial

Describe building: 2 story - light brown Year constructed: _____

Sensitive population: day care / nursing home / hospital / school / other (specify): NA

Number of floors below grade: 1 full basement / crawl space / slab on grade

Number of floors at or above grade: 2

Depth of basement below grade surface: 0 ft. Basement size: _____ ft²

Basement floor construction: concrete / dirt / floating / stone / other (specify): _____

Foundation walls: poured concrete / cinder blocks / stone / other (specify): _____

Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No

Type of heating system (circle all that apply):

| | | | |
|----------------------------|---------------------|-----------------|--------------------|
| <u>hot air circulation</u> | hot air radiation | wood | steam radiation |
| heat pump | hot water radiation | kerosene heater | electric baseboard |
| other (specify): _____ | | | |

Type of ventilation system (circle all that apply):

| | | | |
|-------------------------------|------------------------|---------------------------|----------------|
| central air conditioning | mechanical fans | bathroom ventilation fans | individual air |
| window air conditioning units | kitchen range hood fan | outside air intake | |
| other (specify): _____ | | | |

Type of fuel utilized (circle all that apply):

Natural gas / electric / fuel oil / wood / coal / solar / kerosene

Are the basement walls or floor sealed with waterproof paint or epoxy coatings? Yes / No

Is there a whole house fan? *Yes / No*

Septic system? *Yes / Yes (but not used) / No*

Irrigation/private well? *Yes / Yes (but not used) / No*

Type of ground cover outside of building: grass / concrete / asphalt / other (specify) _____

Existing subsurface depressurization (radon) system in place? *Yes / No* *active / passive*

Sub-slab vapor/moisture barrier in place? *Yes / No*
 Type of barrier: _____

Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): _____

Heavy vehicular traffic nearby (or other mobile sources): _____

Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources | Location(s) | Removed (Yes / No / NA) |
|-------------------------------|-------------|----------------------------|
| Gasoline storage cans | | |
| Gas-powered equipment | | |
| Kerosene storage cans | | |
| Paints / thinners / strippers | | |
| Cleaning solvents | | |
| Oven cleaners | | |
| Carpet / upholstery cleaners | | |
| Other house cleaning products | | |
| Moth balls | | |
| Polishes / waxes | | |
| Insecticides | | |
| Furniture / floor polish | | |
| Nail polish / polish remover | | |
| Hairspray | | |
| Cologne / perfume | | |
| Air fresheners | | |
| Fuel tank (inside building) | | NA |
| Wood stove or fireplace | | NA |
| New furniture / upholstery | | |
| New carpeting / flooring | | NA |
| Hobbies - glues, paints, etc. | | |

Part V – Miscellaneous Items

Do any occupants of the building smoke? *Yes / No* How often? _____

Last time someone smoked in the building? _____ hours / days ago

Does the building have an attached garage directly connected to living space? *Yes / No*

If so, is a car usually parked in the garage? *Yes / No*

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? *Yes / No*

Do the occupants of the building have their clothes dry cleaned? *Yes / No*

If yes, how often? _____ weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? *Yes / No*

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? *Yes / No*

Have any pesticides/herbicides been applied around the building or in the yard? *Yes / No*

If so, when and which chemicals? _____

Has there ever been a fire in the building? *Yes / No* If yes, when? _____

Has painting or staining been done in the building in the last 6 months? *Yes / No*

If yes, when _____ and where? _____

Part VI – Sampling Information

Sample Technician: _____ Phone number: () _____ - _____

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

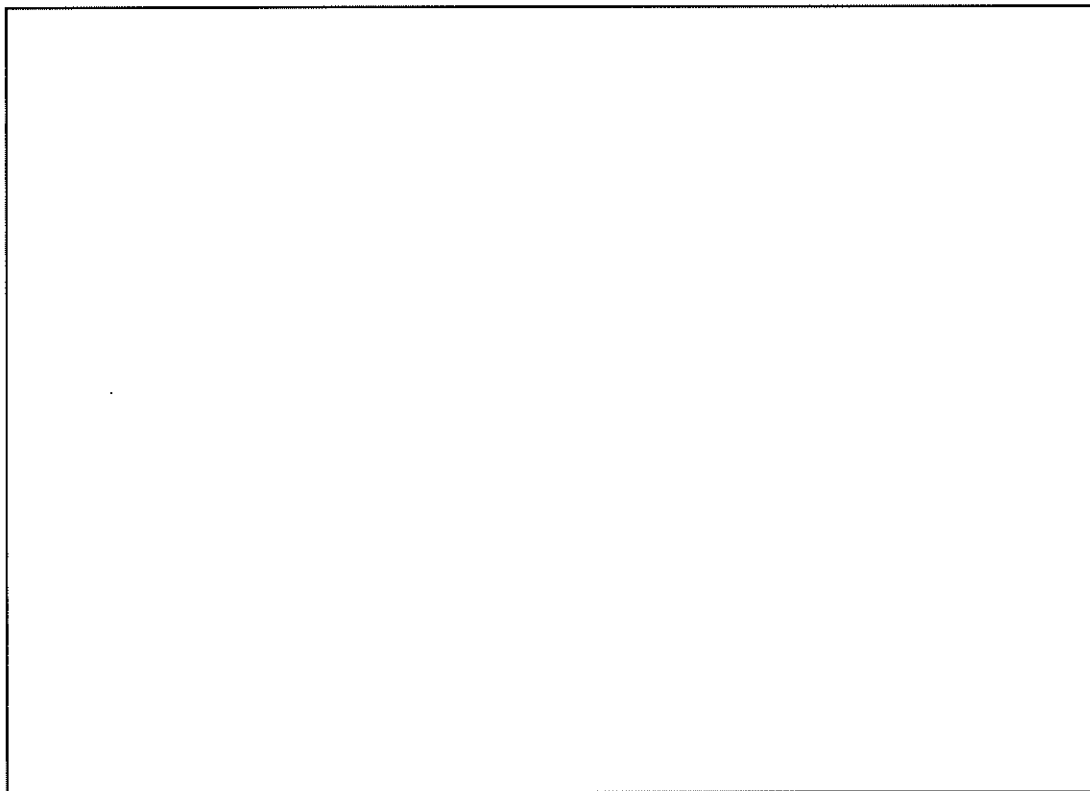
Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: _____

Sample locations (floor, room):

Field ID # _____ - _____ Field ID # _____ - _____

Field ID # _____ - _____ Field ID # _____ - _____

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event? *Yes / No*

Describe the general weather conditions: _____

Part VIII – General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

INDOOR AIR BUILDING SURVEY
AND SAMPLING FORM

Preparer's name: Bethany Gatz Date: 6/2/20
Preparer's affiliation: Tetra Tech Phone #: _____
Site Name: Clinton Engines Project #: _____

Part I - Occupants

Building Address: [REDACTED] S Matteson
Property Contact: [REDACTED] Owner / Renter / other: _____
Contact's Phone: home () _____ work () _____ cell [REDACTED]
of Building occupants: Adults 1 X Other _____ not occupied currently

Part II - Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial
Describe building: 2 story Year constructed: _____
Sensitive population: day care / nursing home / hospital / school / other (specify): NA
Number of floors below grade: 1 (full basement) / crawl space / slab on grade
Number of floors at or above grade: 2
Depth of basement below grade surface: 8 ft. Basement size: _____ ft²
Basement floor construction: concrete / dirt / floating / stone / other (specify): _____
Foundation walls: poured concrete / cinder blocks / stone / other (specify) _____
Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No

Type of heating system (circle all that apply):

hot air circulation hot air radiation wood steam radiation
heat pump hot water radiation kerosene heater electric baseboard
other (specify): _____

Type of ventilation system (circle all that apply):

central air conditioning mechanical fans bathroom ventilation fans individual air
window air conditioning units kitchen range hood fan outside air intake
other (specify): _____

Type of fuel utilized (circle all that apply):

Natural gas electric / fuel oil / wood / coal / solar / kerosene

Are the basement walls or floor sealed with waterproof paint or epoxy coatings? Yes / No

Is there a whole house fan? *Yes / ~~No~~*

Septic system? *~~Yes~~ / Yes (but not used) / No*

Irrigation/private well? *Yes / Yes (but not used) / ~~No~~*

Type of ground cover outside of building: *~~grass~~ / concrete / asphalt / other (specify) _____*

Existing subsurface depressurization (radon) system in place? *Yes / ~~No~~* *active / passive*

Sub-slab vapor/moisture barrier in place? *Yes / ~~No~~*

Type of barrier: _____

Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): *~~No~~*

Heavy vehicular traffic nearby (or other mobile sources): *~~No~~*

Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources | Location(s) | Removed (Yes / No / NA) |
|-------------------------------|-------------|----------------------------|
| Gasoline storage cans | | |
| Gas-powered equipment | | |
| Kerosene storage cans | | |
| Paints / thinners / strippers | | |
| Cleaning solvents | | |
| Oven cleaners | | |
| Carpet / upholstery cleaners | | |
| Other house cleaning products | | |
| Moth balls | | |
| Polishes / waxes | | |
| Insecticides | | |
| Furniture / floor polish | | |
| Nail polish / polish remover | | |
| Hairspray | | |
| Cologne / perfume | | |
| Air fresheners | | |
| Fuel tank (inside building) | | NA |
| Wood stove or fireplace | | NA |
| New furniture / upholstery | | |
| New carpeting / flooring | | NA |
| Hobbies - glues, paints, etc. | | |

Part V – Miscellaneous Items

Do any occupants of the building smoke? Yes / No How often? _____

Last time someone smoked in the building? _____ hours / days ago

Does the building have an attached garage directly connected to living space? Yes / No

If so, is a car usually parked in the garage? Yes / No

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? Yes / No

Do the occupants of the building have their clothes dry cleaned? Yes / No

If yes, how often? weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? Yes / No

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Yes / No

Have any pesticides/herbicides been applied around the building or in the yard? Yes / No

If so, when and which chemicals? _____

Has there ever been a fire in the building? Yes / No If yes, when? _____

Has painting or staining been done in the building in the last 6 months? Yes / No

If yes, when _____ and where? _____

Part VI – Sampling Information

Sample Technician: Bethany Gatz Phone number: (913) 775 - 3449

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

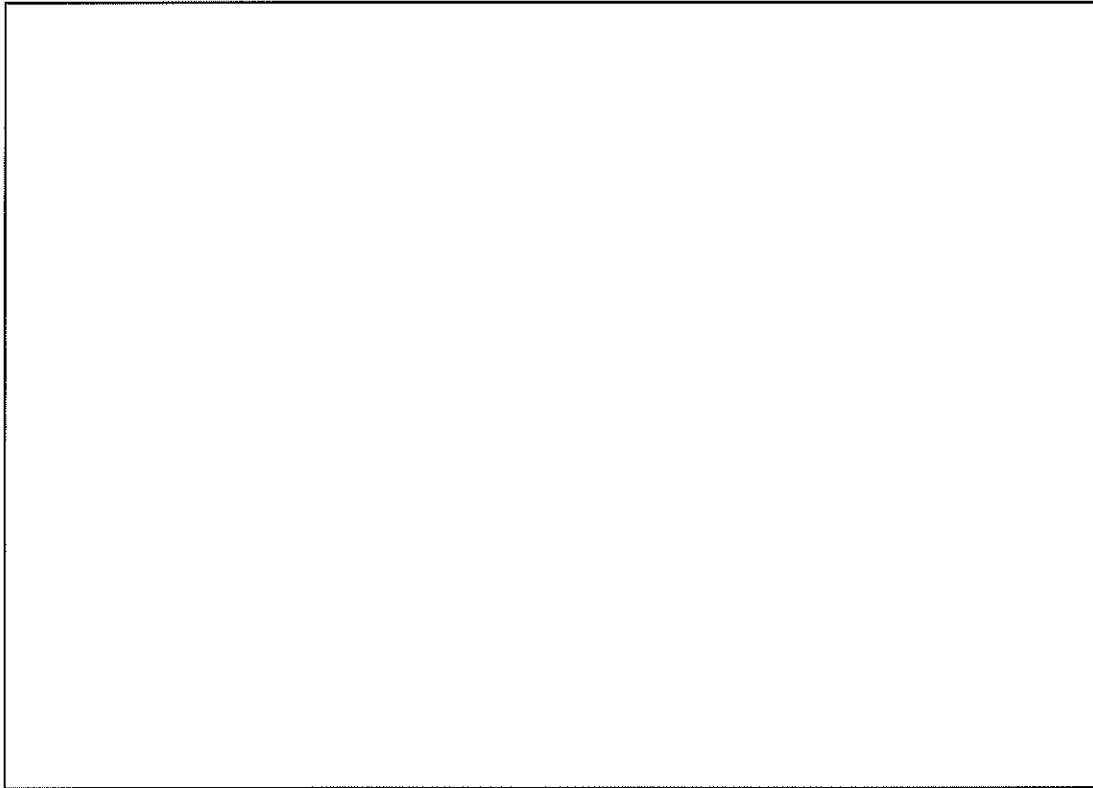
Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: _____

Sample locations (floor, room):

Field ID # 5 - kitchen Field ID # _____ - _____

Field ID # 18 - basement Field ID # _____ - _____

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event? Yes / No

Describe the general weather conditions: sunny, hot

Part VIII – General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

Residence currently unoccupied, ambient air collected at adjacent
property (217 S Matteson)

INDOOR AIR BUILDING SURVEY AND SAMPLING FORM

Preparer's name: Bethany Gatz Date: _____
Preparer's affiliation: Tetra Tech, Inc. Phone #: _____
Site Name: TCE Clinton Engines Project #: _____

Part I - Occupants

Building Address: [REDACTED] S Matteson Street
Property Contact: [REDACTED] Owner / Renter / other: _____
Contact's Phone: home () _____ work () _____ cell [REDACTED]
of Building occupants: Adults _____ Other _____

Part II - Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial
Describe building: 2 story - white Year constructed: _____
Sensitive population: day care / nursing home / hospital / school / other (specify): NA
Number of floors below grade: 1 (full basement / crawl space / slab on grade)
Number of floors at or above grade: 2
Depth of basement below grade surface: _____ ft. Basement size: _____ ft²
Basement floor construction: concrete / dirt / floating / stone / other (specify): _____
Foundation walls: poured concrete / cinder blocks / stone / other (specify): _____
Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No

Type of heating system (circle all that apply):

| | | | |
|------------------------|---------------------|-----------------|--------------------|
| hot air circulation | hot air radiation | wood | steam radiation |
| heat pump | hot water radiation | kerosene heater | electric baseboard |
| other (specify): _____ | | | |

Type of ventilation system (circle all that apply):

| | | | |
|-------------------------------|------------------------|---------------------------|----------------|
| central air conditioning | mechanical fans | bathroom ventilation fans | individual air |
| window air conditioning units | kitchen range hood fan | outside air intake | |
| other (specify): _____ | | | |

Type of fuel utilized (circle all that apply):

Natural gas / electric / fuel oil / wood / coal / solar / kerosene

Are the basement walls or floor sealed with waterproof paint or epoxy coatings? Yes / No

Is there a whole house fan? *Yes / No*

Septic system? *Yes / Yes (but not used) / No*

Irrigation/private well? *Yes / Yes (but not used) / No*

Type of ground cover outside of building: grass / concrete / asphalt / other (specify) _____

Existing subsurface depressurization (radon) system in place? *Yes / No* *active / passive*

Sub-slab vapor/moisture barrier in place? *Yes / No*
 Type of barrier: _____

Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): _____

Heavy vehicular traffic nearby (or other mobile sources): _____

Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources | Location(s) | Removed (Yes / No / NA) |
|-------------------------------|-------------|----------------------------|
| Gasoline storage cans | | |
| Gas-powered equipment | | |
| Kerosene storage cans | | |
| Paints / thinners / strippers | | |
| Cleaning solvents | | |
| Oven cleaners | | |
| Carpet / upholstery cleaners | | |
| Other house cleaning products | | |
| Moth balls | | |
| Polishes / waxes | | |
| Insecticides | | |
| Furniture / floor polish | | |
| Nail polish / polish remover | | |
| Hairspray | | |
| Cologne / perfume | | |
| Air fresheners | | |
| Fuel tank (inside building) | | NA |
| Wood stove or fireplace | | NA |
| New furniture / upholstery | | |
| New carpeting / flooring | | NA |
| Hobbies - glues, paints, etc. | | |

Part V – Miscellaneous Items

Do any occupants of the building smoke? *Yes / No* How often? _____

Last time someone smoked in the building? _____ hours / days ago

Does the building have an attached garage directly connected to living space? *Yes / No*

If so, is a car usually parked in the garage? *Yes / No*

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? *Yes / No*

Do the occupants of the building have their clothes dry cleaned? *Yes / No*

If yes, how often? _____ weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? *Yes / No*

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? *Yes / No*

Have any pesticides/herbicides been applied around the building or in the yard? *Yes / No*

If so, when and which chemicals? _____

Has there ever been a fire in the building? *Yes / No* If yes, when? _____

Has painting or staining been done in the building in the last 6 months? *Yes / No*

If yes, when _____ and where? _____

Part VI – Sampling Information

Sample Technician: _____ Phone number: () _____ - _____

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

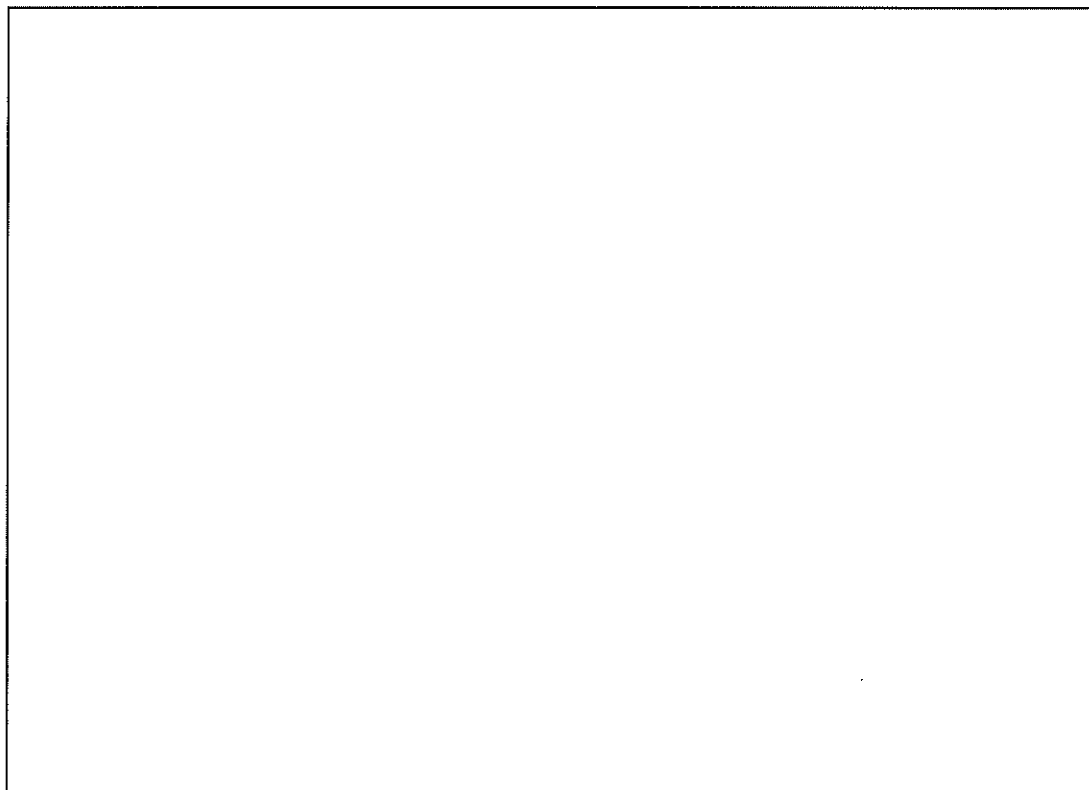
Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: _____

Sample locations (floor, room):

Field ID # _____ - _____ Field ID # _____ - _____

Field ID # _____ - _____ Field ID # _____ - _____

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event? *Yes / No*

Describe the general weather conditions: _____

Part VIII – General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

INDOOR AIR BUILDING SURVEY
AND SAMPLING FORM

Preparer's name: Tim Barbean Date: 6/1/20
Preparer's affiliation: Tetra Tech Phone #: _____
Site Name: Clinton Engines Project #: _____

Part I - Occupants

Building Address: [REDACTED] S Matheson St
Property Contact: [REDACTED] owner / Renter / other: Owner
Contact's Phone: home () _____ work () _____ cell () _____
of Building occupants: Adults 2 Other _____

Part II - Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial
Describe building: 2-story w/ basement Year constructed: _____
Sensitive population: day care / nursing home / hospital / school / other (specify): _____
Number of floors below grade: 1 (full basement) / crawl space / slab on grade)
Number of floors at or above grade: 2
Depth of basement below grade surface: 6 ft. Basement size: _____ ft²
Basement floor construction: concrete / dirt / floating / stone / other (specify): _____
Foundation walls: poured concrete / cinder blocks / stone / other (specify) _____
Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No

Type of heating system (circle all that apply):

| | | | |
|----------------------------|---------------------|-----------------|--------------------|
| <u>hot air circulation</u> | hot air radiation | wood | steam radiation |
| heat pump | hot water radiation | kerosene heater | electric baseboard |
| other (specify): _____ | | | |

Type of ventilation system (circle all that apply):

| | | | |
|---------------------------------|------------------------|---------------------------|----------------|
| <u>central air conditioning</u> | mechanical fans | bathroom ventilation fans | individual air |
| window air conditioning units | kitchen range hood fan | outside air intake | |
| other (specify): _____ | | | |

Type of fuel utilized (circle all that apply):

Natural gas / electric / fuel oil / wood / coal / solar / kerosene

Are the basement walls or floor sealed with waterproof paint or epoxy coatings? Yes / No

Is there a whole house fan? *Yes / No*

Septic system? *(Yes) / Yes (but not used) / No*

Irrigation/private well? *Yes / Yes (but not used) / (No)*

Type of ground cover outside of building: *(grass) / (concrete) / asphalt / other (specify) _____*

Existing subsurface depressurization (radon) system in place? *Yes / (No) active / passive*

Sub-slab vapor/moisture barrier in place? *Yes / (No)*
 Type of barrier: _____

Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): *No*

Heavy vehicular traffic nearby (or other mobile sources): *No*

Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources | Location(s) | Removed (Yes / No / NA) |
|-------------------------------|-------------|----------------------------|
| Gasoline storage cans | | |
| Gas-powered equipment | | |
| Kerosene storage cans | | |
| Paints / thinners / strippers | | |
| Cleaning solvents | | |
| Oven cleaners | | |
| Carpet / upholstery cleaners | | |
| Other house cleaning products | | |
| Moth balls | | |
| Polishes / waxes | | |
| Insecticides | | |
| Furniture / floor polish | | |
| Nail polish / polish remover | | |
| Hairspray | | |
| Cologne / perfume | | |
| Air fresheners | | |
| Fuel tank (inside building) | | NA |
| Wood stove or fireplace | | NA |
| New furniture / upholstery | | |
| New carpeting / flooring | | NA |
| Hobbies - glues, paints, etc. | | |

Part V – Miscellaneous Items

Do any occupants of the building smoke? Yes / No How often? _____

Last time someone smoked in the building? _____ hours / days ago

Does the building have an attached garage directly connected to living space? Yes / No

If so, is a car usually parked in the garage? Yes / No

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? Yes / No

Do the occupants of the building have their clothes dry cleaned? Yes / No

If yes, how often? weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? Yes / No

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Yes / No

Have any pesticides/herbicides been applied around the building or in the yard? Yes / No

If so, when and which chemicals? _____

Has there ever been a fire in the building? Yes / No If yes, when? _____

Has painting or staining been done in the building in the last 6 months? Yes / No

If yes, when _____ and where? _____

Part VI – Sampling Information

Sample Technician: _____ Phone number: () _____ - _____

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

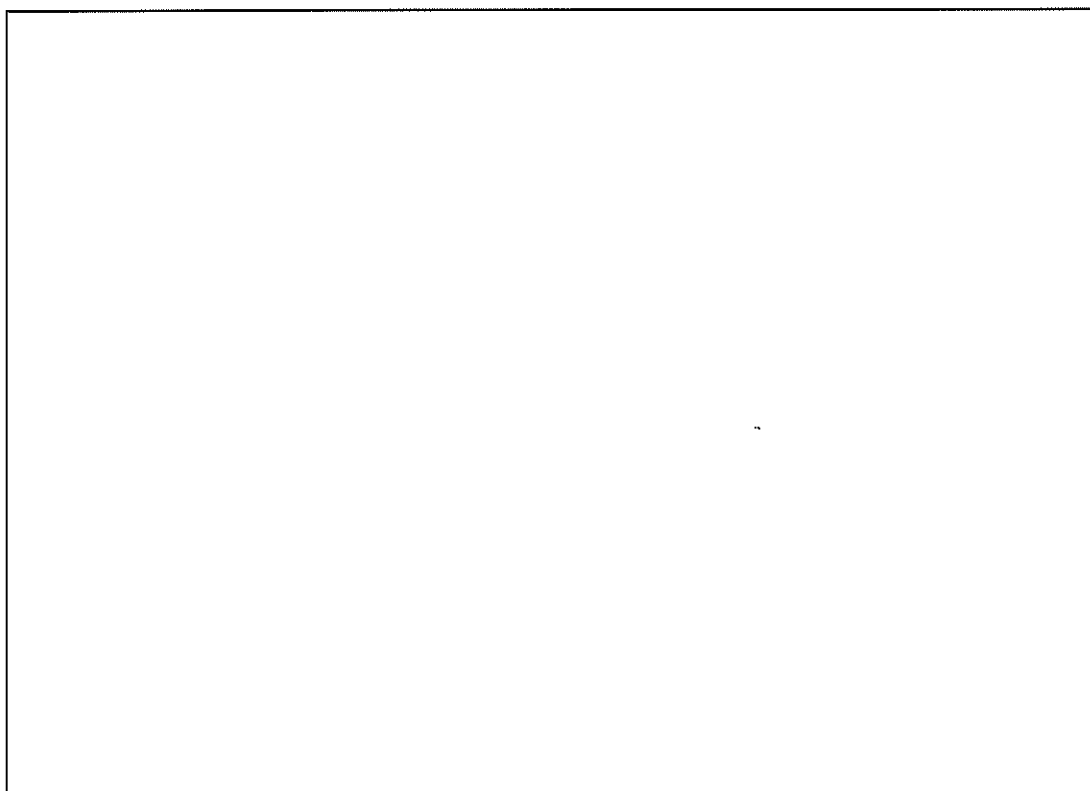
Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: _____

Sample locations (floor, room):

Field ID # _____ - _____ Field ID # _____ - _____

Field ID # _____ - _____ Field ID # _____ - _____

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event? Yes / No

Describe the general weather conditions: Sunny and warm

Part VIII – General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

INDOOR AIR BUILDING SURVEY
AND SAMPLING FORM

Preparer's name: Yvonne M. Smith Date: 7/20/20
Preparer's affiliation: USEPA, R7 OSC Phone #: 913-551-7795
Site Name: TCE-Clinton Engines Project #: _____

Part I - Occupants

Building Address: [redacted] S. Matteson
Property Contact: [redacted] Owner / Renter / other: owner
Contact's Phone: home [redacted] work () _____ cell () _____
of Building occupants: Adults 1 Other _____

Part II - Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial
Describe building: Residential Year constructed: 1930's

Sensitive population: day care / nursing home / hospital / school / other (specify): _____

Number of floors below grade: 1 (full basement / crawl space / slab on grade)

Number of floors at or above grade: 1 + Attic

Depth of basement below grade surface: _____ ft. Basement size: _____ ft²

Basement floor construction: concrete / dirt / floating / stone / other (specify): _____

Foundation walls: poured concrete / cinder blocks / stone / other (specify): _____

Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No

Type of heating system (circle all that apply):

hot air circulation hot air radiation wood steam radiation
heat pump hot water radiation kerosene heater electric baseboard
other (specify): _____

Type of ventilation system (circle all that apply):

central air conditioning mechanical fans bathroom ventilation fans individual air
window air conditioning units kitchen range hood fan outside air intake
not used other (specify): _____

Type of fuel utilized (circle all that apply):

Natural gas electric / fuel oil / wood / coal / solar / kerosene

Are the basement walls or floor sealed with waterproof paint or epoxy coatings?

Yes / No

Is there a whole house fan? Yes / No

Septic system? Yes / Yes (but not used) / No

Irrigation/private well? Yes / Yes (but not used) / No

Type of ground cover outside of building: grass / concrete / asphalt / other (specify) _____

Existing subsurface depressurization (radon) system in place? Yes / No *active / passive*
Not working

Sub-slab vapor/moisture barrier in place? Yes No

Type of barrier: _____

Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): None

Heavy vehicular traffic nearby (or other mobile sources): None

Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources | Location(s) | Removed (Yes / No / NA) |
|--------------------------------------|------------------|----------------------------|
| Gasoline storage cans | <u>In garage</u> | <u>N</u> |
| Gas-powered equipment | | |
| Kerosene storage cans | | |
| Paints / thinners / strippers | <u>In garage</u> | <u>N</u> |
| <u>Cleaning solvents</u> | | |
| Oven cleaners | | |
| <u>Carpet / upholstery cleaners</u> | | |
| Other house cleaning products | | |
| Moth balls | | |
| Polishes / waxes | | |
| Insecticides | | |
| Furniture / floor polish | | |
| Nail polish / polish remover | | |
| Hairspray | | |
| Cologne / perfume | | |
| Air fresheners | | |
| Fuel tank (inside building) | | NA |
| Wood stove or fireplace | | NA |
| New furniture / upholstery | | |
| New carpeting / flooring | | NA |
| <u>Hobbies - glues, paints, etc.</u> | | |

Part V – Miscellaneous Items

Do any occupants of the building smoke? Yes / No How often? _____

Last time someone smoked in the building? NA hours / days ago

Does the building have an attached garage directly connected to living space? Yes / No

If so, is a car usually parked in the garage? Yes / No

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? Yes / No

Do the occupants of the building have their clothes dry cleaned? Yes No

If yes, how often? weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? Yes No

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Yes / No NA

Have any pesticides/herbicides been applied around the building or in the yard? Yes / No

If so, when and which chemicals? Spring 2000

Has there ever been a fire in the building? Yes / No If yes, when? _____

Has painting or staining been done in the building in the last 6 months? Yes No

If yes, when _____ and where? _____

Part VI – Sampling Information

Sample Technician: _____ Phone number: () _____ - _____

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

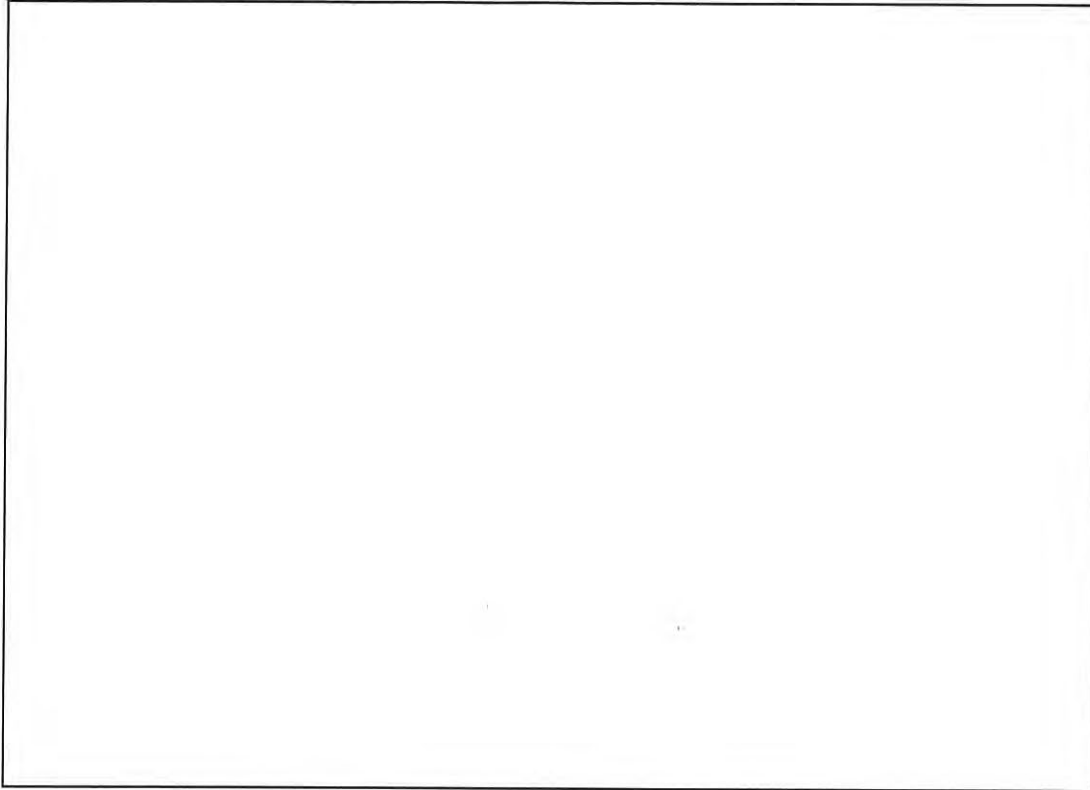
Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: _____

Sample locations (floor, room):

Field ID # _____ - _____ Field ID # _____ - _____

Field ID # _____ - _____ Field ID # _____ - _____

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event? Yes / No

Describe the general weather conditions: Light drizzle

Part VIII – General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

Radon Mitigation System in garage
(not functional). Installed by father of current
owner.

INDOOR AIR BUILDING SURVEY AND SAMPLING FORM

Preparer's name: Tim Barbean Date: 6/2/20
Preparer's affiliation: Tetra Tech Phone #: _____
Site Name: ^{TD} PET TCE Clinton Engines Project #: _____

Part I - Occupants

Building Address: ██████ 5 Matteson St
Property Contact: _____ Owner / Renter / other: _____
Contact's Phone: home () _____ work () _____ cell () _____
of Building occupants: Adults _____ Other _____

Part II - Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial
Describe building: 2-story Year constructed: _____
Sensitive population: day care / nursing home / hospital / school / other (specify): _____
Number of floors below grade: 1 full basement / crawl space / slab on grade)
Number of floors at or above grade: 2
Depth of basement below grade surface: 6 ft. Basement size: _____ ft²
Basement floor construction: concrete / dirt / floating / stone / other (specify): _____
Foundation walls: poured concrete / cinder blocks / stone / other (specify) _____
Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No
Type of heating system (circle all that apply):
hot air circulation hot air radiation wood steam radiation
heat pump hot water radiation kerosene heater electric baseboard
other (specify): _____
Type of ventilation system (circle all that apply):
central air conditioning mechanical fans bathroom ventilation fans individual air
window air conditioning units kitchen range hood fan outside air intake
other (specify): _____
Type of fuel utilized (circle all that apply):
Natural gas electric / fuel oil / wood / coal / solar / kerosene
Are the basement walls or floor sealed with waterproof paint or epoxy coatings? Yes / No

Is there a whole house fan? *Yes / No*

Septic system? *Yes / Yes (but not used) / No*

Irrigation/private well? *Yes / Yes (but not used) / No*

Type of ground cover outside of building: grass / concrete / asphalt / other (specify) _____

Existing subsurface depressurization (radon) system in place? *Yes / No* *active / passive*

Sub-slab vapor/moisture barrier in place? *Yes / No*

Type of barrier: _____

Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): No

Heavy vehicular traffic nearby (or other mobile sources): No

Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources | Location(s) | Removed (Yes / No / NA) |
|-------------------------------|-------------------|----------------------------|
| Gasoline storage cans | | |
| Gas-powered equipment | | |
| Kerosene storage cans | | |
| Paints / thinners / strippers | | |
| Cleaning solvents | <i>Moved</i> | |
| Oven cleaners | | |
| Carpet / upholstery cleaners | <i>Other room</i> | |
| Other house cleaning products | | |
| Moth balls | | |
| Polishes / waxes | | |
| Insecticides | | |
| Furniture / floor polish | | |
| Nail polish / polish remover | | |
| Hairspray | | |
| Cologne / perfume | | |
| Air fresheners | | |
| Fuel tank (inside building) | | NA |
| Wood stove or fireplace | | NA |
| New furniture / upholstery | | |
| New carpeting / flooring | | NA |
| Hobbies - glues, paints, etc. | <i>Upstairs</i> | |

Part V – Miscellaneous Items

Do any occupants of the building smoke? *Yes / No* How often? _____

Last time someone smoked in the building? _____ hours / days ago

Does the building have an attached garage directly connected to living space? *Yes / No*

If so, is a car usually parked in the garage? *Yes / No*

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? *Yes / No*

Do the occupants of the building have their clothes dry cleaned? *Yes / No*

If yes, how often? weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? *Yes / No*

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? *Yes / No*

Have any pesticides/herbicides been applied around the building or in the yard? *Yes / No*

If so, when and which chemicals? _____

Has there ever been a fire in the building? *Yes / No* If yes, when? _____

Has painting or staining been done in the building in the last 6 months? *Yes / No*

If yes, when _____ and where? _____

Part VI – Sampling Information

Sample Technician: Tim Barbean Phone number: () _____ - _____

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

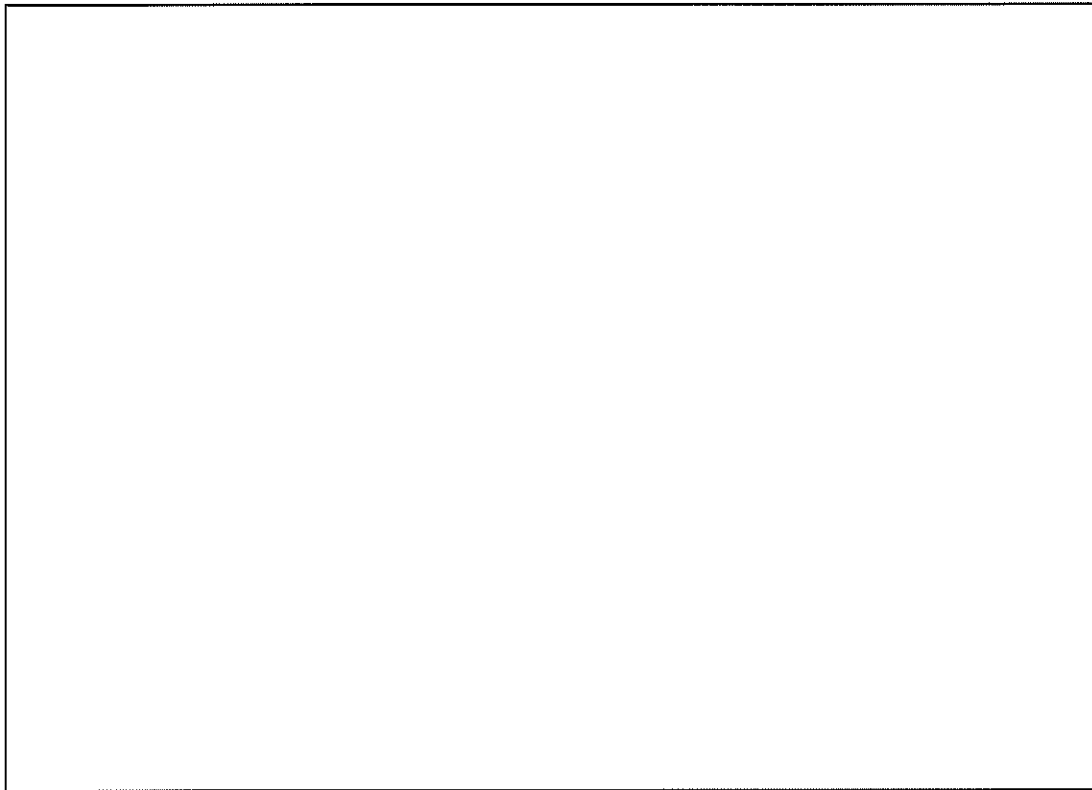
Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: _____

Sample locations (floor, room):

Field ID # 3 - kitchen living Field ID # _____ - _____

Field ID # 17 - basement Field ID # _____ - _____

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event? Yes / (No)

Describe the general weather conditions: Sunny, hot

Part VIII – General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

INDOOR AIR BUILDING SURVEY AND SAMPLING FORM

Preparer's name: Bethany Gatz Date: June 2, 2020
Preparer's affiliation: _____ Phone #: _____
Site Name: TCE Clinton Engines Project #: _____

Part I - Occupants

Building Address: [redacted] S Matheson St.
Property Contact: [redacted] owner / Renter / other: _____
Contact's Phone: home () _____ work () _____ cell [redacted]
of Building occupants: Adults 2 Other 1

Part II - Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial
Describe building: 2 story yellow Year constructed: _____
Sensitive population: day care / nursing home / hospital / school / other (specify): NA
Number of floors below grade: 1 (full basement / crawl space / slab on grade)
Number of floors at or above grade: 2
Depth of basement below grade surface: 8 ft. Basement size: _____ ft²
Basement floor construction: concrete / dirt / floating / stone / other (specify): _____
Foundation walls: poured concrete / cinder blocks / stone / other (specify): _____
Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No

Type of heating system (circle all that apply):

hot air circulation hot air radiation wood steam radiation
heat pump hot water radiation kerosene heater electric baseboard
other (specify): _____

Type of ventilation system (circle all that apply):

central air conditioning mechanical fans bathroom ventilation fans individual air
window air conditioning units kitchen range hood fan outside air intake
other (specify): _____

Type of fuel utilized (circle all that apply):

Natural gas / electric / fuel oil / wood / coal / solar / kerosene

Are the basement walls or floor sealed with waterproof paint or epoxy coatings? Yes / No

Is there a whole house fan? *Yes / No*

Septic system? *(Yes) / Yes (but not used) / No*

Irrigation/private well? *Yes / Yes (but not used) / (No)*

Type of ground cover outside of building: *grass* / concrete / asphalt / other (specify) _____

Existing subsurface depressurization (radon) system in place? *Yes / (No)* *active / passive*

Sub-slab vapor/moisture barrier in place? *Yes / (No)*
 Type of barrier: _____

Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): *NA*

Heavy vehicular traffic nearby (or other mobile sources): *NA*

Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources | Location(s) | Removed (Yes / No / NA) |
|-------------------------------|-------------|----------------------------|
| Gasoline storage cans | | |
| Gas-powered equipment | | |
| Kerosene storage cans | | |
| Paints / thinners / strippers | | |
| Cleaning solvents | | |
| Oven cleaners | | |
| Carpet / upholstery cleaners | | |
| Other house cleaning products | | |
| Moth balls | | |
| Polishes / waxes | | |
| Insecticides | | |
| Furniture / floor polish | | |
| Nail polish / polish remover | | |
| Hairspray | | |
| Cologne / perfume | | |
| Air fresheners | | |
| Fuel tank (inside building) | | NA |
| Wood stove or fireplace | | NA |
| New furniture / upholstery | | |
| New carpeting / flooring | | NA |
| Hobbies - glues, paints, etc. | | |

Part V – Miscellaneous Items

Do any occupants of the building smoke? *Yes / No* How often? _____

Last time someone smoked in the building? _____ hours / days ago

Does the building have an attached garage directly connected to living space? *Yes / No*

If so, is a car usually parked in the garage? *Yes / No*

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? *Yes / No*

Do the occupants of the building have their clothes dry cleaned? *Yes / No*

If yes, how often? weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? *Yes / No*

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? *Yes / No*

Have any pesticides/herbicides been applied around the building or in the yard? *Yes / No*

If so, when and which chemicals? _____

Has there ever been a fire in the building? *Yes / No* If yes, when? _____

Has painting or staining been done in the building in the last 6 months? *Yes / No*

If yes, when _____ and where? _____

Part VI – Sampling Information

Sample Technician: _____ Phone number: () _____ - _____

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

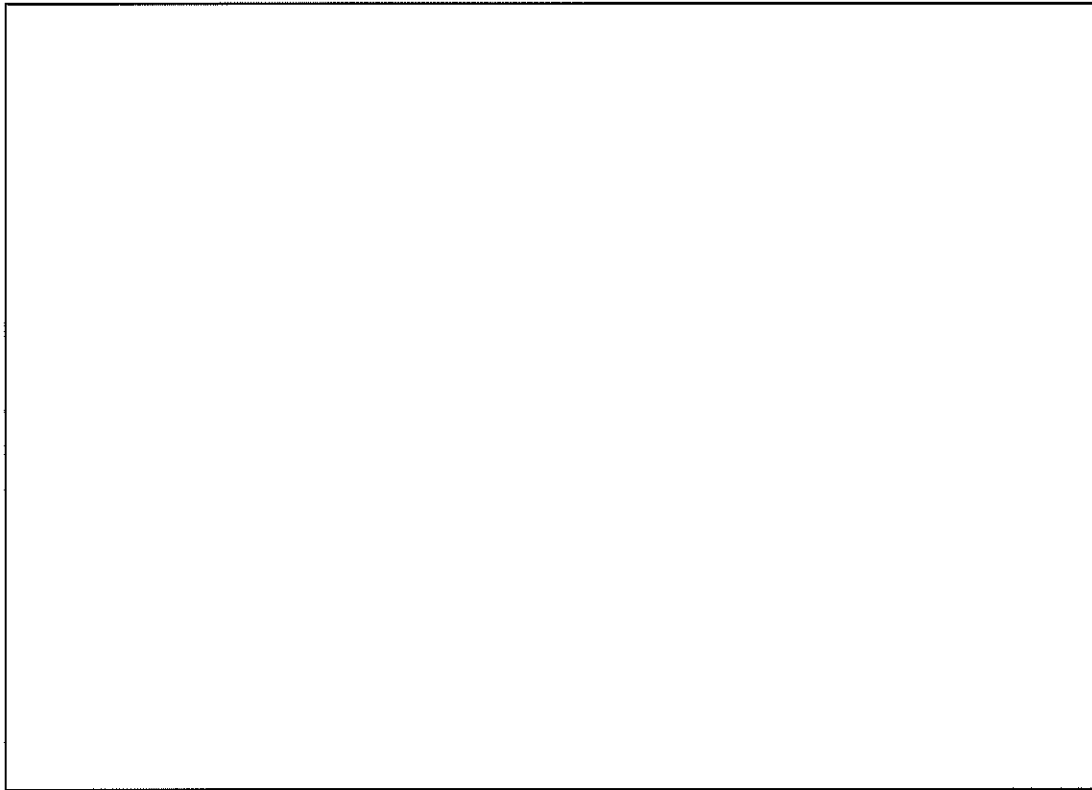
Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: _____

Sample locations (floor, room):

Field ID # _____ - _____ Field ID # _____ - _____

Field ID # _____ - _____ Field ID # _____ - _____

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event?

6/3/2 morning
Yes / No

Describe the general weather conditions: sunny, hot, humid

Part VIII – General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

INDOOR AIR BUILDING SURVEY
AND SAMPLING FORM

Preparer's name: Yvonne M. Smith Date: 7/20/2020
Preparer's affiliation: USEPA, R7 OSC Phone #: 913-551-7795
Site Name: TCE-Clinton Engines Project #: _____

Part I - Occupants

Building Address: 5. Matteson
Property Contact: [REDACTED] Owner / Renter / other: Owner
Contact's Phone: home [REDACTED] work () _____ cell () _____
of Building occupants: Adults 2 Other 1 child

Part II - Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial
Describe building: 2 story Year constructed: _____

Sensitive population: day care / nursing home / hospital / school / other (specify): yes

Number of floors below grade: 1 (full basement / crawl space / slab on grade)

Number of floors at or above grade: 1

Depth of basement below grade surface: _____ ft. Basement size: _____ ft²

Basement floor construction: concrete / dirt / floating / stone / other (specify): _____

Foundation walls: poured concrete / cinder blocks / stone / other (specify): _____

Basement sump present? Yes No Sump pump? Yes No Water in sump? Yes No

Type of heating system (circle all that apply):

hot air circulation hot air radiation wood steam radiation
heat pump hot water radiation kerosene heater electric baseboard
other (specify): _____ not functional

Type of ventilation system (circle all that apply):

central air conditioning mechanical fans bathroom ventilation fans individual air
window air conditioning units kitchen range hood fan outside air intake
other (specify): _____

Type of fuel utilized (circle all that apply):

Natural gas electric fuel oil / wood / coal / solar / kerosene

Are the basement walls or floor sealed with waterproof paint or epoxy coatings?

Yes / No

Is there a whole house fan? Yes / No

Septic system? Yes / Yes (but not used) / No

Irrigation/private well? Yes / Yes (but not used) / No

Type of ground cover outside of building: grass / concrete / asphalt / other (specify) _____

Existing subsurface depressurization (radon) system in place? Yes / No active / passive

Sub-slab vapor/moisture barrier in place? Yes / No

Type of barrier: _____

Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): _____

Heavy vehicular traffic nearby (or other mobile sources): _____

Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources | Location(s) | Removed (Yes / No / NA) |
|--------------------------------------|-------------------------------|----------------------------|
| Gasoline storage cans | | |
| Gas-powered equipment | | |
| Kerosene storage cans | | |
| Paints / thinners / strippers | | |
| <u>Cleaning solvents</u> | | |
| Oven cleaners | | |
| <u>Carpet / upholstery cleaners</u> | | |
| Other house cleaning products | | |
| Moth balls | | |
| Polishes / waxes | | |
| Insecticides | | |
| Furniture / floor polish | | |
| Nail polish / polish remover | | |
| Hairspray | | |
| Cologne / perfume | | |
| Air fresheners | <u>Wash/Dryer in basement</u> | |
| Fuel tank (inside building) | | NA |
| Wood stove or fireplace | | NA |
| New furniture / upholstery | | |
| New carpeting / flooring | | NA |
| <u>Hobbies - glues, paints, etc.</u> | | |

Part V – Miscellaneous Items

Do any occupants of the building smoke? Yes / No How often? Everyday

Last time someone smoked in the building? am hours / days ago

Does the building have an attached garage directly connected to living space? Yes / No

If so, is a car usually parked in the garage? Yes / No

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? Yes / No

Do the occupants of the building have their clothes dry cleaned? Yes / No

If yes, how often? weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? Yes / No

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Yes / No

Have any pesticides/herbicides been applied around the building or in the yard? Yes / No

If so, when and which chemicals? _____

Has there ever been a fire in the building? Yes / No If yes, when? _____

Has painting or staining been done in the building in the last 6 months? Yes / No

If yes, when _____ and where? _____

Part VI – Sampling Information

Sample Technician: _____ Phone number: () _____ - _____

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

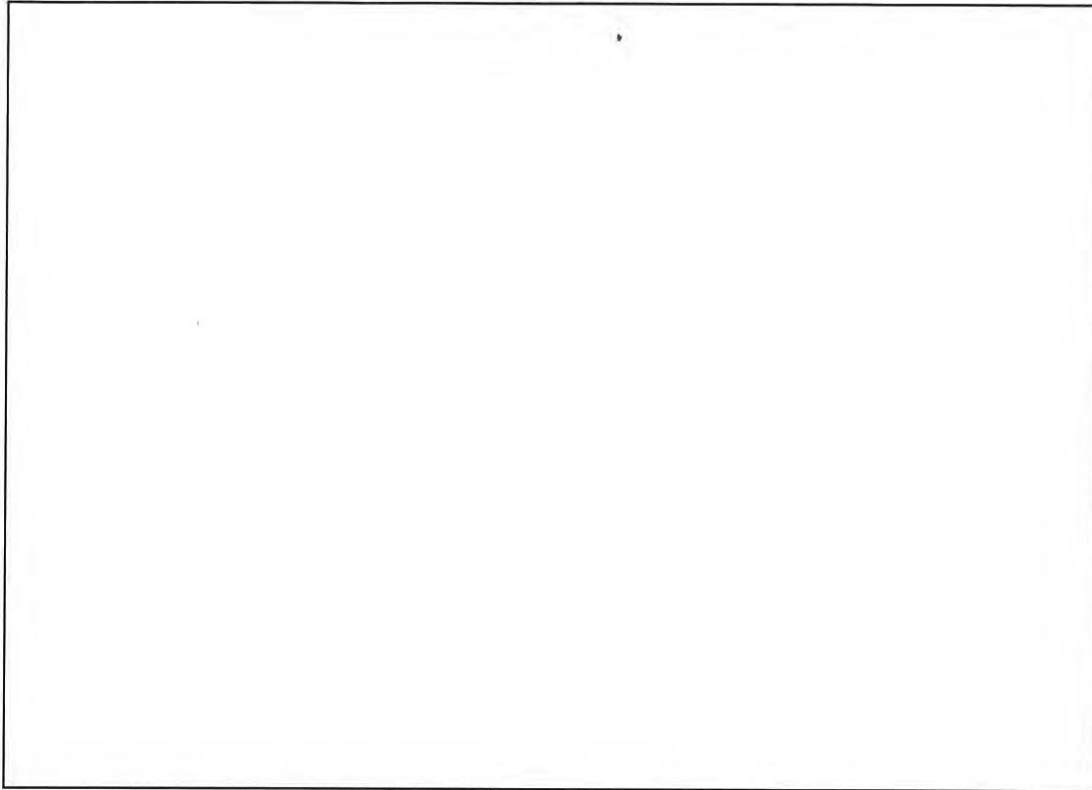
Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: _____

Sample locations (floor, room):

Field ID # _____ - _____ Field ID # _____ - _____

Field ID # _____ - _____ Field ID # _____ - _____

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event?

~~Yes~~ / No

Describe the general weather conditions: Light drizzle

Part VIII – General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

INDOOR AIR BUILDING SURVEY
AND SAMPLING FORM

Preparer's name: Yvonne M. Smith Date: 7/20/2020
Preparer's affiliation: USEPA, RT OSC Phone #: 913-551-7795
Site Name: TCE-Clinton English Project #: _____

Part I - Occupants

Building Address: [REDACTED] E. Platt St., Maquokette, IA
Property Contact: [REDACTED] Owner / Renter / other: [REDACTED]
Contact's Phone: home () _____ work () _____ cell [REDACTED]
of Building occupants: Adults 2 Other _____

Part II - Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial

Describe building: 2 story + crawl space Year constructed: 1847

Sensitive population: day care / nursing home / hospital / school / other (specify): None

Number of floors below grade: 1 (full basement / crawl space / slab on grade)

Number of floors at or above grade: 2

Depth of basement below grade surface: _____ ft. Basement size: _____ ft²

Basement floor construction: concrete / dirt / floating / stone / other (specify): _____

Foundation walls: poured concrete / cinder blocks / stone / other (specify): _____

Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No

Type of heating system (circle all that apply):

hot air circulation hot air radiation wood steam radiation
heat pump hot water radiation kerosene heater electric baseboard
other (specify): _____

empty,
not used

Type of ventilation system (circle all that apply):

3 - central air conditioning mechanical fans bathroom ventilation fans individual air
window air conditioning units kitchen range hood fan outside air intake
other (specify): _____

Type of fuel utilized (circle all that apply):

Natural gas / electric / fuel oil / wood / coal / solar / kerosene

Are the basement walls or floor sealed with waterproof paint or epoxy coatings?

Yes No

Is there a whole house fan? Yes / No attic

Septic system? Yes / Yes (but not used) / No

Irrigation/private well? Yes / Yes (but not used) / No

Type of ground cover outside of building: grass concrete asphalt / other (specify) _____

Existing subsurface depressurization (radon) system in place? Yes / No active / passive

Sub-slab vapor/moisture barrier in place? Yes / No
 Type of barrier: _____

Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): _____

Heavy vehicular traffic nearby (or other mobile sources): _____

Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources | Location(s) | Removed (Yes / No / NA) |
|-------------------------------|-------------|----------------------------|
| Gasoline storage cans | <u>shed</u> | <u>NA</u> |
| Gas-powered equipment | <u>shed</u> | <u>NA</u> |
| Kerosene storage cans | | |
| Paints / thinners / strippers | | |
| Cleaning solvents | | |
| Oven cleaners | | |
| Carpet / upholstery cleaners | | |
| Other house cleaning products | | |
| Moth balls | | |
| Polishes / waxes | | |
| Insecticides | | |
| Furniture / floor polish | | |
| Nail polish / polish remover | | |
| Hairspray | | |
| Cologne / perfume | | |
| Air fresheners | | |
| Fuel tank (inside building) | | NA |
| Wood stove or fireplace | | NA |
| New furniture / upholstery | | |
| New carpeting / flooring | | NA |
| Hobbies - glues, paints, etc. | | |

Part V – Miscellaneous Items

Do any occupants of the building smoke? Yes / No How often? _____

Last time someone smoked in the building? _____ hours / days ago

Does the building have an attached garage directly connected to living space? Yes / No

If so, is a car usually parked in the garage? Yes / No

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? Yes / No

Do the occupants of the building have their clothes dry cleaned? Yes / No

If yes, how often? weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? Yes / No

If yes, what types of solvents are used? cleaning chemicals (cornet cleaner, bleach)

If yes, are their clothes washed at work? Yes / No

Have any pesticides/herbicides been applied around the building or in the yard? Yes / No

If so, when and which chemicals? _____

Has there ever been a fire in the building? Yes / No If yes, when? _____

Has painting or staining been done in the building in the last 6 months? Yes / No

If yes, when 4 mo. ago and where? Bedroom, paint, whole outside

Part VI – Sampling Information

Sample Technician: _____ Phone number: () _____ - _____

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

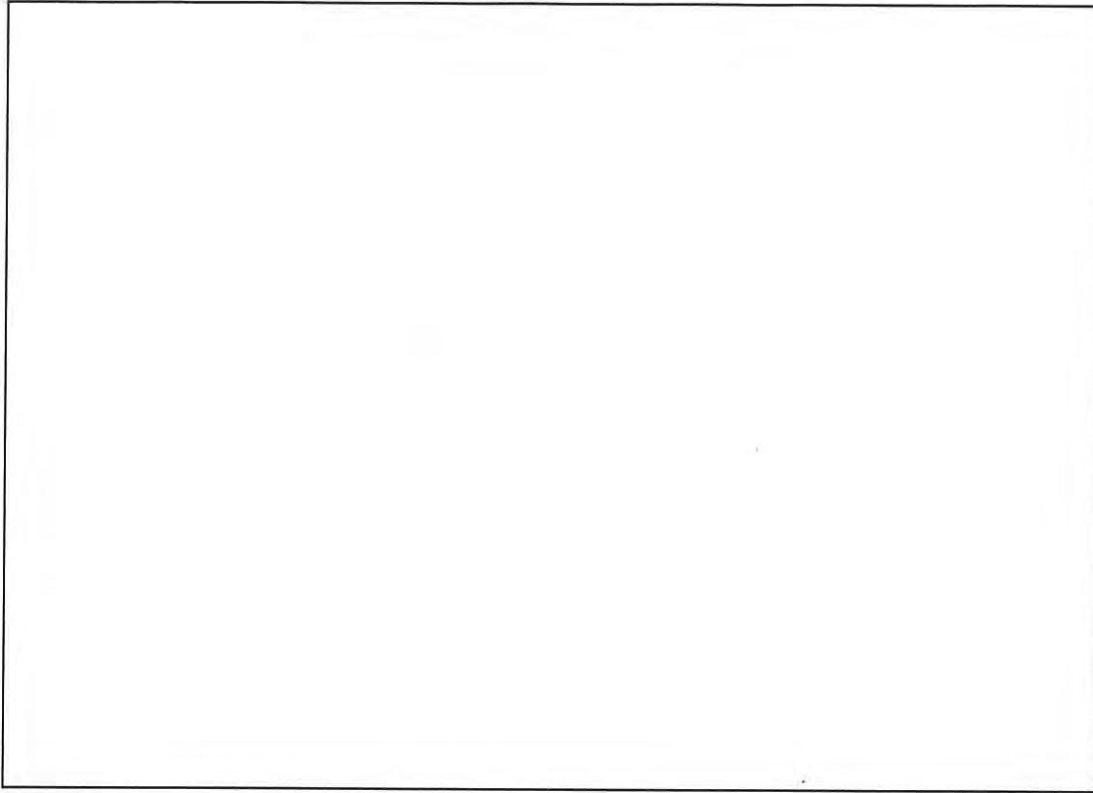
Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: _____

Sample locations (floor, room):

Field ID # _____ - _____ Field ID # _____ - _____

Field ID # _____ - _____ Field ID # _____ - _____

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event? Yes ☒ No

Describe the general weather conditions: Light drizzle

Part VIII – General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

Smoking only outside. Kerosene heater empty and not used,

**INDOOR AIR BUILDING SURVEY
AND SAMPLING FORM**

Preparer's name: Bethany Coatz Date: 7/22/20
Preparer's affiliation: Tetra Tech Phone #: _____
Site Name: TCE Clinton Engines Project #: _____

Part I - Occupants

Building Address: ██████ E Platt
Property Contact ████████████████████ Owner / Renter / other: _____
Contact's Phone: home ████████████████████ work () _____ cell () _____
of Building occupants: Adults ✓ Other ✓ Business

Part II - Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial
Describe building: Commercial, 1 story, corrugated metal siding Year constructed: _____
Sensitive population: day care / nursing home / hospital / school / other (specify): NA
Number of floors below grade: 0 (full basement / crawl space / slab on grade)
Number of floors at or above grade: 1
☒ Depth of basement below grade surface: _____ ft. Basement size: _____ ft²
☒ Basement floor construction: concrete / dirt / floating / stone / other (specify): _____
☒ Foundation walls: poured concrete / cinder blocks / stone / other (specify): _____
☒ Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No

Type of heating system (circle all that apply):

hot air circulation hot air radiation wood steam radiation
heat pump hot water radiation kerosene heater electric baseboard
other (specify): _____

Type of ventilation system (circle all that apply):

central air conditioning mechanical fans bathroom ventilation fans individual air
window air conditioning units kitchen range hood fan outside air intake
other (specify): _____

Type of fuel utilized (circle all that apply):

Natural gas electric fuel oil / wood / coal / solar / kerosene

☒ Are the basement walls or floor sealed with waterproof paint or epoxy coatings? Yes / No

Is there a whole house fan? Yes No

Septic system? Yes / Yes (but not used) No

Irrigation/private well? Yes / Yes (but not used) No

Type of ground cover outside of building: grass concrete / asphalt / other (specify) _____

Existing subsurface depressurization (radon) system in place? Yes No active / passive

Sub-slab vapor/moisture barrier in place? Yes No

Type of barrier: _____

Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): NA

Heavy vehicular traffic nearby (or other mobile sources): NA

Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources | Location(s) | Removed (Yes / No / NA) |
|-------------------------------|-------------|----------------------------|
| Gasoline storage cans | | |
| Gas-powered equipment | | |
| Kerosene storage cans | | |
| Paints / thinners / strippers | | |
| Cleaning solvents | | |
| Oven cleaners | | |
| Carpet / upholstery cleaners | | |
| Other house cleaning products | | |
| Moth balls | | |
| Polishes / waxes | | |
| Insecticides | | |
| Furniture / floor polish | | |
| Nail polish / polish remover | | |
| Hairspray | | |
| Cologne / perfume | | |
| Air fresheners | | |
| Fuel tank (inside building) | | NA |
| Wood stove or fireplace | | NA |
| New furniture / upholstery | | |
| New carpeting / flooring | | NA |
| Hobbies - glues, paints, etc. | | |

Part V – Miscellaneous Items

Do any occupants of the building smoke? Yes / No How often? _____

Last time someone smoked in the building? _____ hours / days ago

Does the building have an attached garage directly connected to living space? Yes / No

If so, is a car usually parked in the garage? Yes / No

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? Yes / No

Do the occupants of the building have their clothes dry cleaned? Yes / No

If yes, how often? weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? Yes / No

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Yes / No

Have any pesticides/herbicides been applied around the building or in the yard? Yes / No

If so, when and which chemicals? _____

Has there ever been a fire in the building? Yes / No If yes, when? _____

Has painting or staining been done in the building in the last 6 months? Yes / No

If yes, when _____ and where? _____

Part VI – Sampling Information

Sample Technician: _____ Phone number: () _____ - _____

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

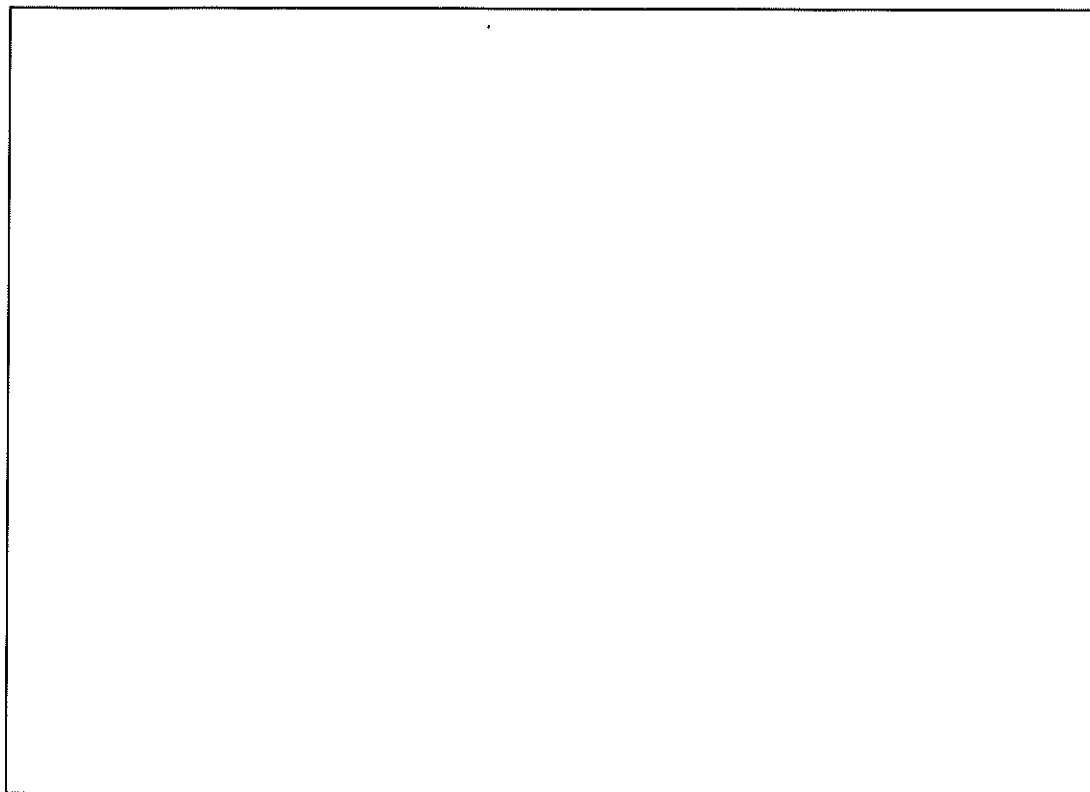
Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: _____

Sample locations (floor, room):

Field ID # _____ - _____ Field ID # _____ - _____

Field ID # _____ - _____ Field ID # _____ - _____

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event? *Yes / No*

Describe the general weather conditions: _____

Part VIII – General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

INDOOR AIR BUILDING SURVEY
AND SAMPLING FORM

Preparer's name: Yvonne M. Smith Date: 7/20/2020
Preparer's affiliation: USEPA, RTOSC Phone #: 913-551-7795
Site Name: TCE - Clinton Engines Site Project #: _____

Part I - Occupants

Building Address: [REDACTED] E. Platt St.
Property Contact: [REDACTED] Owner / Renter / other: _____
Contact's Phone: home () _____ work () _____ cell ([REDACTED])
of Building occupants: Adults 2 Other _____

Part II - Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial
Describe building: residential + 2 story + basement Year constructed: 100 yrs +
Sensitive population: day care / nursing home / hospital / school / other (specify): _____
Number of floors below grade: 1 (full basement / crawl space / slab on grade)
Number of floors at or above grade: 2
Depth of basement below grade surface: _____ ft. Basement size: _____ ft²
Basement floor construction: concrete / dirt / floating / stone / other (specify): _____
Foundation walls: poured concrete / cinder blocks / stone / other (specify): _____
Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No
Type of heating system (circle all that apply):
hot air circulation hot air radiation wood steam radiation
heat pump hot water radiation kerosene heater electric baseboard
other (specify): _____
Type of ventilation system (circle all that apply):
central air conditioning mechanical fans bathroom ventilation fans individual air
window air conditioning units kitchen range hood fan outside air intake
other (specify): fans
Type of fuel utilized (circle all that apply):
Natural gas / electric / fuel oil / wood / coal / solar / kerosene
Are the basement walls or floor sealed with waterproof paint or epoxy coatings? Yes / No

Is there a whole house fan?

Yes / No

Septic system?

Yes / Yes (but not used) / No

Irrigation/private well?

Yes / Yes (but not used) / No

Type of ground cover outside of building: grass / concrete / asphalt / other (specify) _____

Existing subsurface depressurization (radon) system in place? Yes / No active / passive

Sub-slab vapor/moisture barrier in place?

Yes / No

Type of barrier: _____

Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): _____

Heavy vehicular traffic nearby (or other mobile sources): _____

Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources | Location(s) | Removed (Yes / No / NA) |
|--------------------------------------|------------------------------|----------------------------|
| Gasoline storage cans | | |
| Gas-powered equipment | | |
| Kerosene storage cans | | |
| Paints / thinners / strippers | <u>on ledge & sealed</u> | <u>No</u> |
| <u>Cleaning solvents</u> | | |
| Oven cleaners | | |
| <u>Carpet / upholstery cleaners</u> | | |
| Other house cleaning products | | |
| Moth balls | | |
| Polishes / waxes | | |
| Insecticides | | |
| Furniture / floor polish | | |
| Nail polish / polish remover | | |
| Hairspray | | |
| Cologne / perfume | | |
| Air fresheners | | |
| Fuel tank (inside building) | | NA |
| Wood stove or fireplace | | NA |
| New furniture / upholstery | | |
| New carpeting / flooring | | NA |
| <u>Hobbies - glues, paints, etc.</u> | | |

Part V – Miscellaneous Items

Do any occupants of the building smoke? Yes / No How often? _____

Last time someone smoked in the building? _____ hours / days ago

Does the building have an attached garage directly connected to living space? Yes / No

If so, is a car usually parked in the garage? Yes / No

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? Yes / No

Do the occupants of the building have their clothes dry cleaned? Yes / No

If yes, how often? _____ weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? Yes / No

If yes, what types of solvents are used? all types (photographer @ car dealership)

If yes, are their clothes washed at work? Yes / No

Have any pesticides/herbicides been applied around the building or in the yard? Yes / No

If so, when and which chemicals? _____

Has there ever been a fire in the building? Yes / No If yes, when? unknown

Has painting or staining been done in the building in the last 6 months? Yes / No

If yes, when 3 weeks and where? bedroom

Part VI – Sampling Information

Sample Technician: _____ Phone number: () _____ - _____

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

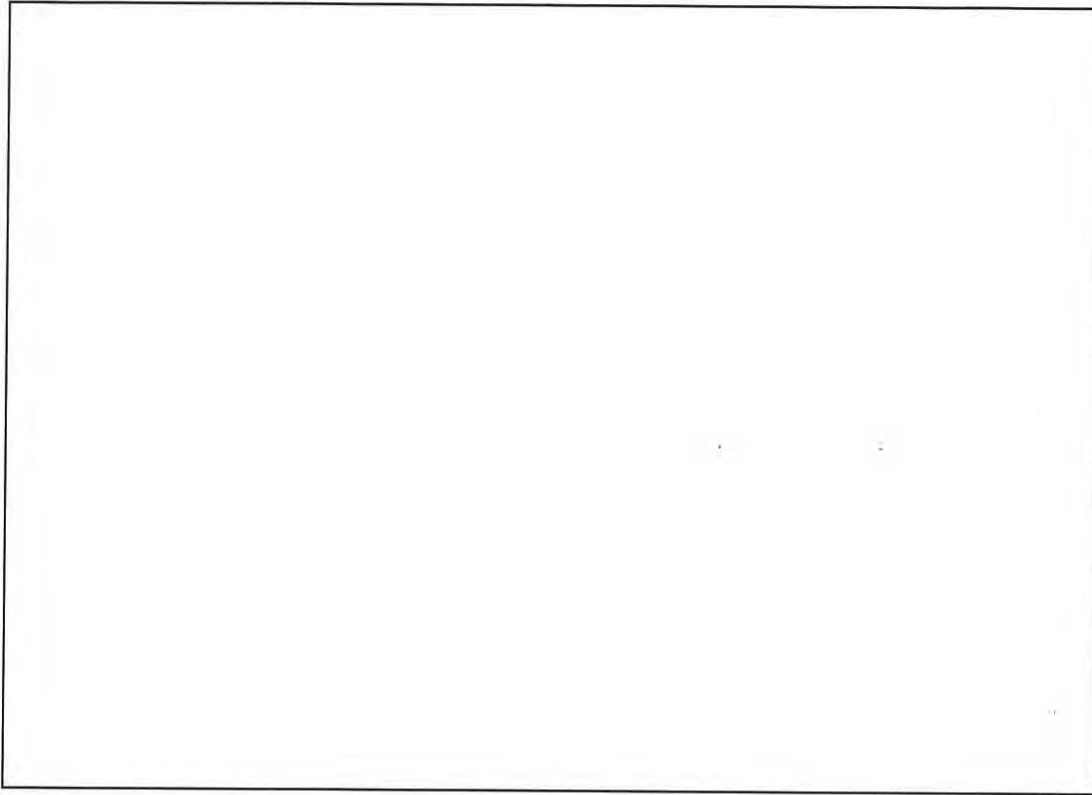
Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: _____

Sample locations (floor, room):

Field ID # _____ - _____ Field ID # _____ - _____

Field ID # _____ - _____ Field ID # _____ - _____

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event?

~~Yes~~ / No ^{bsw}

Describe the general weather conditions: Light drizzle.

Part VIII – General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

INDOOR AIR BUILDING SURVEY
AND SAMPLING FORM

Preparer's name: Richard Hatt Yvonne Smith Date: 7/20/20
Preparer's affiliation: USEPA Phone #: 913-551-7795
Site Name: TCE - Ginton Engines Project #: _____

Part I - Occupants

Building Address: [redacted] E. Platt
Property Contact: [redacted] Owner / Renter / other: Director
Contact's Phone: home [redacted] work () () cell () ()
of Building occupants: Adults _____ Other 841+ (capacity)

Part II - Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial

Describe building: Arts - auditorium Year constructed: _____

Sensitive population: day care / nursing home / hospital / school / other (specify): All type

Number of floors below grade: 1 (full basement) / crawl space / slab on grade

Number of floors at or above grade: 1

Depth of basement below grade surface: _____ ft. Basement size: _____ ft² (601 inches)

Basement floor construction: concrete / dirt / floating / stone / other (specify): _____

Foundation walls: poured concrete / cinder blocks / stone / other (specify): _____

Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No

Type of heating system (circle all that apply):

| | | | |
|------------------------|---------------------|-----------------|--------------------|
| hot air circulation | hot air radiation | wood | steam radiation |
| heat pump | hot water radiation | kerosene heater | electric baseboard |
| other (specify): _____ | | | |

Type of ventilation system (circle all that apply):

| | | |
|---------------------------------|------------------------|---|
| <u>central air conditioning</u> | mechanical fans | <u>bathroom ventilation fans individual air</u> |
| window air conditioning units | kitchen range hood fan | <u>outside air intake</u> |
| other (specify): _____ | | |

Type of fuel utilized (circle all that apply):

Natural gas / electric / fuel oil / wood / coal / solar / kerosene (boiler)

Are the basement walls or floor sealed with waterproof paint or epoxy coatings? Yes / No

Is there a whole house fan?

Yes / No

Septic system?

Yes / Yes (but not used) / No

Irrigation/private well?

Yes / Yes (but not used) / No

Type of ground cover outside of building: grass / concrete / asphalt / other (specify) _____

Existing subsurface depressurization (radon) system in place? Yes / No active / passive

Sub-slab vapor/moisture barrier in place? Yes / No

Type of barrier: _____

Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): _____

Heavy vehicular traffic nearby (or other mobile sources): _____

Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources | Location(s) | Removed (Yes / No / NA) |
|--------------------------------------|------------------|----------------------------|
| Gasoline storage cans | | |
| Gas-powered equipment | | |
| Kerosene storage cans | | |
| Paints / thinners / strippers | <u>Backstage</u> | <u>N</u> |
| <u>Cleaning solvents</u> | | |
| Oven cleaners | | |
| <u>Carpet / upholstery cleaners</u> | | |
| Other house cleaning products | | |
| Moth balls | | |
| Polishes / waxes | | |
| Insecticides | | |
| Furniture / floor polish | | |
| Nail polish / polish remover | | |
| Hairspray | | |
| Cologne / perfume | | |
| Air fresheners | | |
| Fuel tank (inside building) | | NA |
| Wood stove or fireplace | | NA |
| New furniture / upholstery | | |
| New carpeting / flooring | | NA |
| <u>Hobbies - glues, paints, etc.</u> | | |

Part V – Miscellaneous Items

Do any occupants of the building smoke? Yes / No How often? _____

Last time someone smoked in the building? _____ hours / days ago

Does the building have an attached garage directly connected to living space? Yes / No N/A

If so, is a car usually parked in the garage? Yes / No

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? Yes / No

Do the occupants of the building have their clothes dry cleaned? Yes / No Unknown

If yes, how often? weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? Yes / No

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Yes / No

Have any pesticides/herbicides been applied around the building or in the yard? Yes / No

If so, when and which chemicals? unknown

Has there ever been a fire in the building? Yes / No If yes, when? _____

Has painting or staining been done in the building in the last 6 months? Yes / No

If yes, when _____ and where? _____

Part VI – Sampling Information

Sample Technician: _____ Phone number: () _____ - _____

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: _____

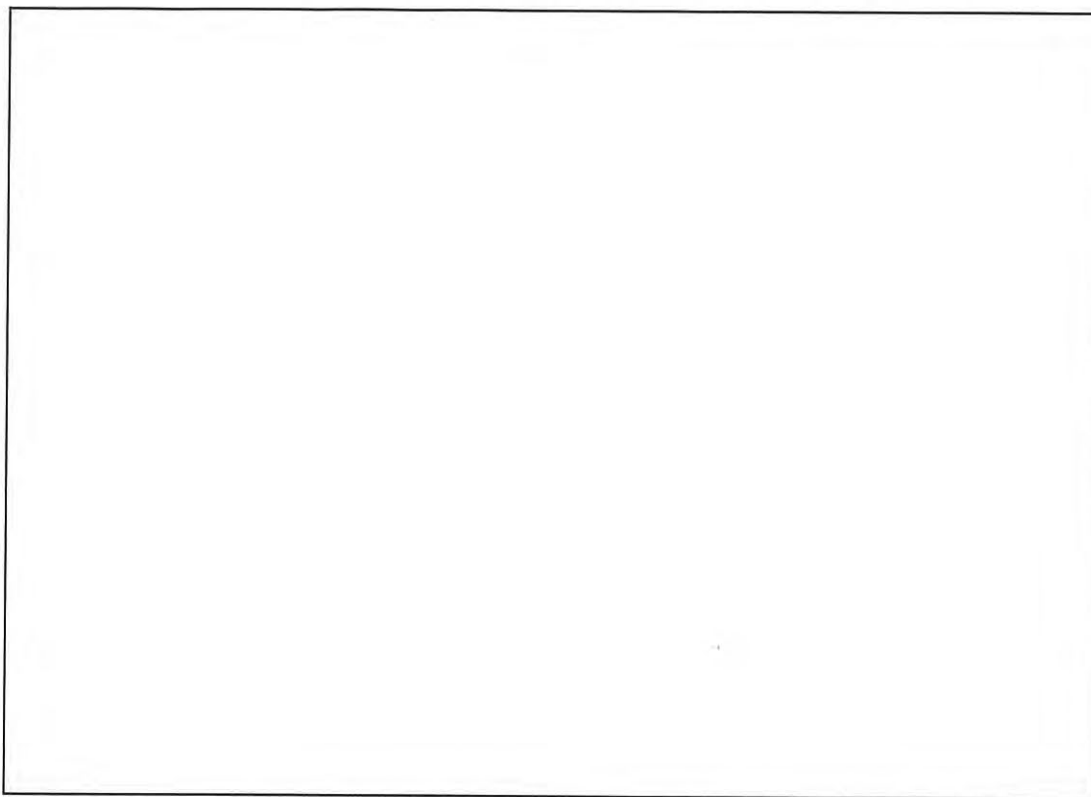
Sample locations (floor, room):

Field ID # _____ - _____ Field ID # _____ - _____

Field ID # _____ - _____ Field ID # _____ - _____

Once was golf course (possibly)

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event? Yes / No

Describe the general weather conditions: Drizzle (light)

Part VIII – General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

Property may have been built on a former golf course. Located
next to Becker's Vet Clinic.

INDOOR AIR BUILDING SURVEY
AND SAMPLING FORM

radio

Preparer's name: Yvonne M. Smith
Robert R. Waack Sr Date: 7/20/2020
Preparer's affiliation: Homeowner Phone #: 563-212-5333
Site Name: TCE-Clinton Engines Site Project #: _____

Part I - Occupants

Building Address: N. Dearborn
Property Contact: [redacted] Owner / Renter / other: Owner
Contact's Phone: home [redacted] work () _____ cell () _____
of Building occupants: Adults 1 Other _____

Part II - Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial
Describe building: 2 story Year constructed: 1948
Sensitive population: day care / nursing home / hospital / school / other (specify): _____
Number of floors below grade: 3/4 (full basement / crawl space / slab on grade) partial (3/4)
Number of floors at or above grade: 1
Depth of basement below grade surface: _____ ft. Basement size: _____ ft²
Basement floor construction: concrete / dirt / floating / stone / other (specify): w/sump pump hole
Foundation walls: poured concrete / cinder blocks / stone / other (specify) _____
Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No
Type of heating system (circle all that apply):
hot air circulation hot air radiation wood steam radiation
heat pump hot water radiation kerosene heater electric baseboard
other (specify): _____
Type of ventilation system (circle all that apply):
central air conditioning mechanical fans bathroom ventilation fans individual air
window air conditioning units kitchen range hood fan outside air intake
other (specify): _____
Type of fuel utilized (circle all that apply):
Natural gas / electric / fuel oil / wood / coal / solar / kerosene
Are the basement walls or floor sealed with waterproof paint or epoxy coatings? Yes No

Is there a whole house fan? Yes / No

Septic system? Yes / Yes (but not used) / No

Irrigation/private well? Yes / Yes (but not used) / No

Type of ground cover outside of building: grass / concrete / asphalt / other (specify) _____

Existing subsurface depressurization (radon) system in place? Yes / No active / passive

Sub-slab vapor/moisture barrier in place? Yes / No

Type of barrier: _____

Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): No

Heavy vehicular traffic nearby (or other mobile sources): No

Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources | Location(s) | Removed (Yes / No / NA) |
|--------------------------------------|------------------------|----------------------------|
| Gasoline storage cans | | |
| Gas-powered equipment | | |
| Kerosene storage cans | | |
| Paints / thinners / strippers | <u>paints (sealed)</u> | <u>No</u> |
| <u>Cleaning solvents</u> | | |
| Oven cleaners | | |
| <u>Carpet / upholstery cleaners</u> | | |
| Other house cleaning products | | |
| Moth balls | | |
| Polishes / waxes | | |
| Insecticides | | |
| Furniture / floor polish | | |
| Nail polish / polish remover | | |
| Hairspray | | |
| Cologne / perfume | | |
| Air fresheners | | |
| Fuel tank (inside building) | | NA |
| Wood stove or fireplace | | NA |
| New furniture / upholstery | | |
| New carpeting / flooring | | NA |
| <u>Hobbies - glues, paints, etc.</u> | | |

Part V – Miscellaneous Items

Do any occupants of the building smoke? Yes / No How often? _____

Last time someone smoked in the building? No hours / days ago

Does the building have an attached garage directly connected to living space? Yes / No

If so, is a car usually parked in the garage? Yes / No

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? Yes / No

Do the occupants of the building have their clothes dry cleaned? Yes / No

If yes, how often? weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? Yes / No

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Yes / No

Have any pesticides/herbicides been applied around the building or in the yard? Yes / No

If so, when and which chemicals? _____

Has there ever been a fire in the building? Yes / No If yes, when? _____

Has painting or staining been done in the building in the last 6 months? Yes / No

If yes, when _____ and where? _____

Part VI – Sampling Information

Sample Technician: _____ Phone number: () _____ - _____

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

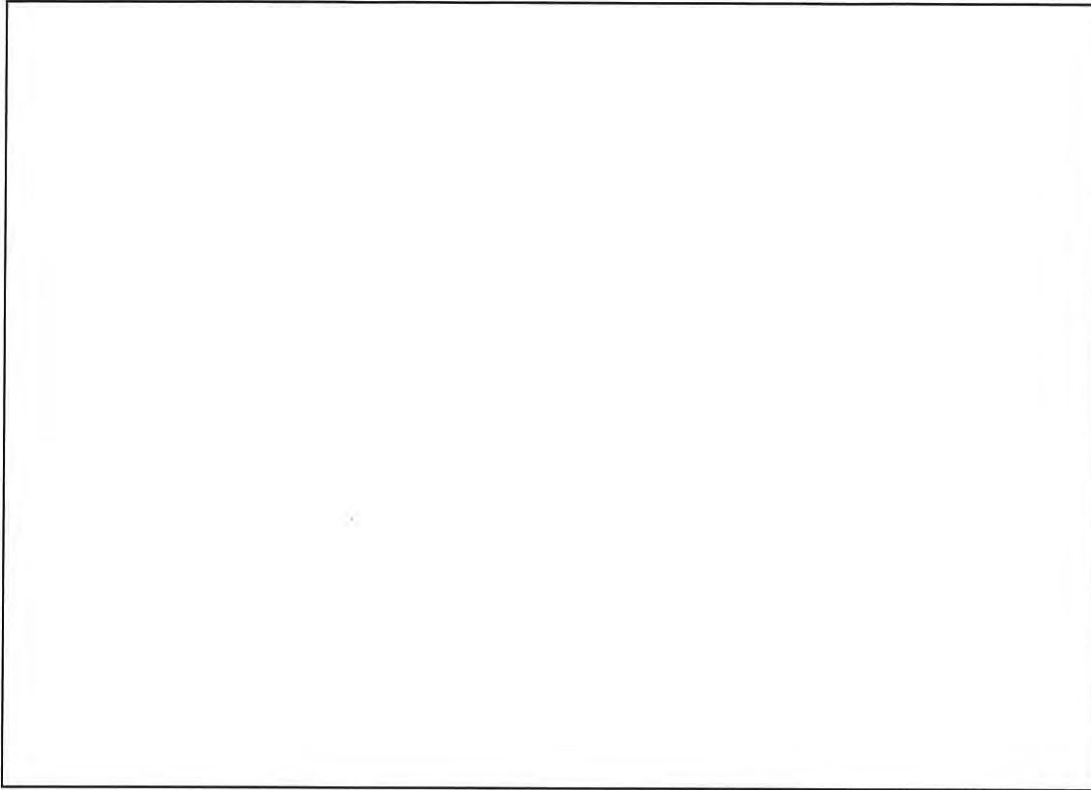
Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: _____

Sample locations (floor, room):

Field ID # _____ - _____ Field ID # _____ - _____

Field ID # _____ - _____ Field ID # _____ - _____

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event?

Yes ☒ No

Describe the general weather conditions: Drizzle

Part VIII – General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

Resident cannot go downstairs due to health issues

INDOOR AIR BUILDING SURVEY
AND SAMPLING FORM

Preparer's name: Bethany Gatz Date: June 2, 2020
Preparer's affiliation: _____ Phone #: _____
Site Name: TCE Clinton Engines Project #: _____

Part I - Occupants

Building Address: [redacted] E Platt St.
Property Contact: [redacted] Owner / Renter / other: _____
Contact's Phone: home () _____ work () _____ cell [redacted]
of Building occupants: Adults _____ Other _____

Part II - Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial
Describe building: 2 Year constructed: _____
Sensitive population: day care / nursing home / hospital / school / other (specify): _____
Number of floors below grade: _____ (full basement / crawl space / slab on grade)
Number of floors at or above grade: _____
Depth of basement below grade surface: _____ ft. Basement size: _____ ft²
Basement floor construction: concrete / dirt / floating / stone / other (specify): _____
Foundation walls: poured concrete / cinder blocks / stone / other (specify) _____
Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No
Type of heating system (circle all that apply):
hot air circulation hot air radiation wood steam radiation
heat pump hot water radiation kerosene heater electric baseboard
other (specify): _____
Type of ventilation system (circle all that apply):
central air conditioning mechanical fans bathroom ventilation fans individual air
window air conditioning units kitchen range hood fan outside air intake
other (specify): _____
Type of fuel utilized (circle all that apply):
Natural gas / electric / fuel oil / wood / coal / solar / kerosene
Are the basement walls or floor sealed with waterproof paint or epoxy coatings? Yes / No

Is there a whole house fan? *Yes / No*

Septic system? *Yes / Yes (but not used) / No*

Irrigation/private well? *Yes / Yes (but not used) / No*

Type of ground cover outside of building: grass / concrete / asphalt / other (specify) _____

Existing subsurface depressurization (radon) system in place? *Yes / No* *active / passive*

Sub-slab vapor/moisture barrier in place? *Yes / No*
 Type of barrier: _____

Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): *adjacent to gas station & com facility*

Heavy vehicular traffic nearby (or other mobile sources): *NA*

Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources | Location(s) | Removed (Yes / No / NA) |
|-------------------------------|-------------|----------------------------|
| Gasoline storage cans | | |
| Gas-powered equipment | | |
| Kerosene storage cans | | |
| Paints / thinners / strippers | | |
| Cleaning solvents | | |
| Oven cleaners | | |
| Carpet / upholstery cleaners | | |
| Other house cleaning products | | |
| Moth balls | | |
| Polishes / waxes | | |
| Insecticides | | |
| Furniture / floor polish | | |
| Nail polish / polish remover | | |
| Hairspray | | |
| Cologne / perfume | | |
| Air fresheners | | |
| Fuel tank (inside building) | | NA |
| Wood stove or fireplace | | NA |
| New furniture / upholstery | | |
| New carpeting / flooring | | NA |
| Hobbies - glues, paints, etc. | | |

Part V – Miscellaneous Items

Do any occupants of the building smoke? Yes No How often? _____

 Last time someone smoked in the building? _____ hours / days ago

Does the building have an attached garage directly connected to living space? Yes / No

 If so, is a car usually parked in the garage? Yes / No

 Are gas-powered equipment or cans of gasoline/fuels stored in the garage? Yes / No

Do the occupants of the building have their clothes dry cleaned? Yes / No

 If yes, how often? weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? Yes / No

 If yes, what types of solvents are used? _____

 If yes, are their clothes washed at work? Yes / No

Have any pesticides/herbicides been applied around the building or in the yard? Yes / No

 If so, when and which chemicals? _____

Has there ever been a fire in the building? Yes / No If yes, when? _____

Has painting or staining been done in the building in the last 6 months? Yes / No

 If yes, when _____ and where? _____

Part VI – Sampling Information

Sample Technician: _____ Phone number: () _____ - _____

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

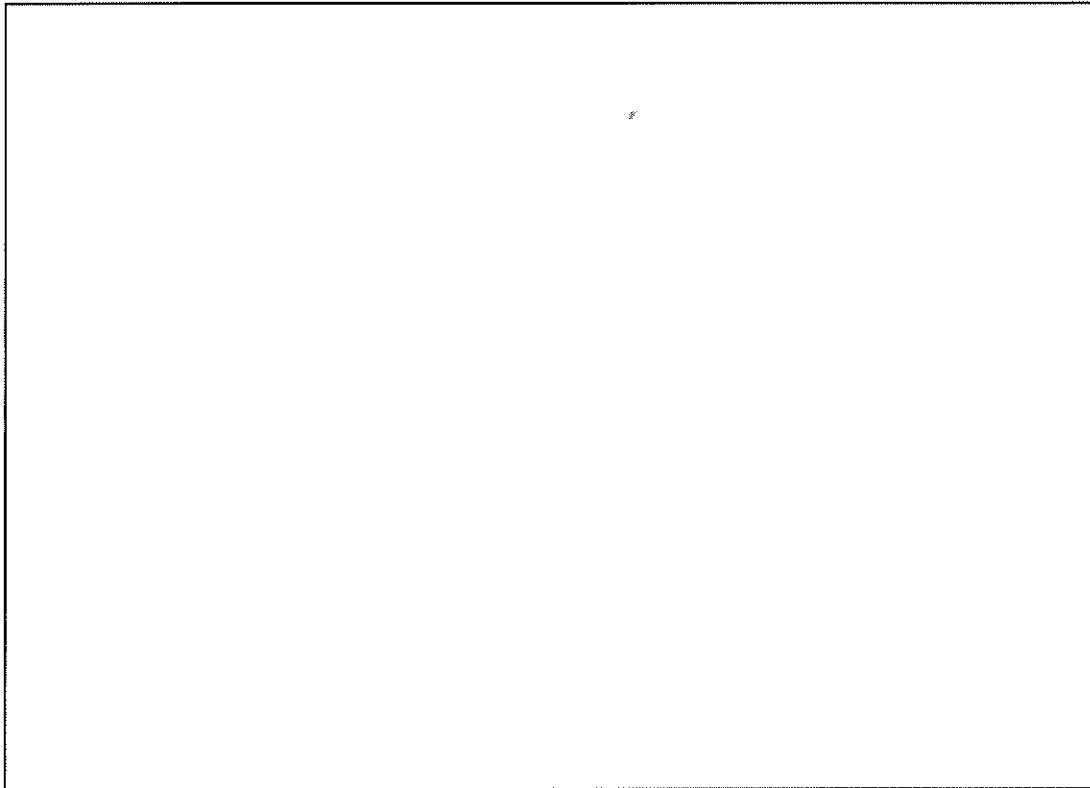
Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: _____

Sample locations (floor, room):

Field ID # _____ - _____ Field ID # _____ - _____

Field ID # _____ - _____ Field ID # _____ - _____

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event?

rain 6/3/20 morning
Yes / No

Describe the general weather conditions: sunny, hot

Part VIII – General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

INDOOR AIR BUILDING SURVEY
AND SAMPLING FORM

Preparer's name: Bethany Gatz Date: June 2, 2020
Preparer's affiliation: _____ Phone #: _____
Site Name: TCE Clinton Engines Project #: _____

Part I - Occupants

Building Address: [REDACTED] E Platt St.
Property Contact: [REDACTED] Owner / Renter / other: _____
Contact's Phone: home () _____ work () _____ cell [REDACTED]
of Building occupants: Adults _____ Other _____

Part II - Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial

Describe building: 1 story tan Year constructed: _____

Sensitive population: day care / nursing home / hospital / school / other (specify): NA

Number of floors below grade: 1 (full basement / crawl space / slab on grade)

Number of floors at or above grade: 1

Depth of basement below grade surface: 10 ft. Basement size: _____ ft²

Basement floor construction: concrete / dirt / floating / stone / other (specify): _____

Foundation walls: poured concrete / cinder blocks / stone / other (specify) _____

Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No

Type of heating system (circle all that apply):

| | | | |
|----------------------------|---------------------|-----------------|--------------------|
| <u>hot air circulation</u> | hot air radiation | wood | steam radiation |
| heat pump | hot water radiation | kerosene heater | electric baseboard |
| other (specify): _____ | | | |

Type of ventilation system (circle all that apply):

| | | | |
|---------------------------------|------------------------|---------------------------|----------------|
| <u>central air conditioning</u> | mechanical fans | bathroom ventilation fans | individual air |
| window air conditioning units | kitchen range hood fan | outside air intake | |
| other (specify): _____ | | | |

Type of fuel utilized (circle all that apply):

Natural gas / electric / fuel oil / wood / coal / solar / kerosene

Are the basement walls or floor sealed with waterproof paint or epoxy coatings? Yes / No

Is there a whole house fan? *Yes / No*

Septic system? *(Yes) / Yes (but not used) / No*

Irrigation/private well? *Yes / Yes (but not used) / (No)*

Type of ground cover outside of building: *(grass) / concrete / asphalt / other (specify) _____*

Existing subsurface depressurization (radon) system in place? *Yes / (No) active / passive*

Sub-slab vapor/moisture barrier in place? *Yes / (No)*

Type of barrier: _____

Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): *NA*

Heavy vehicular traffic nearby (or other mobile sources): *NA*

Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources | Location(s) | Removed (Yes / No / NA) |
|-------------------------------|-------------|----------------------------|
| Gasoline storage cans | | |
| Gas-powered equipment | | |
| Kerosene storage cans | | |
| Paints / thinners / strippers | | |
| Cleaning solvents | | |
| Oven cleaners | | |
| Carpet / upholstery cleaners | | |
| Other house cleaning products | | |
| Moth balls | | |
| Polishes / waxes | | |
| Insecticides | | |
| Furniture / floor polish | | |
| Nail polish / polish remover | | |
| Hairspray | | |
| Cologne / perfume | | |
| Air fresheners | | |
| Fuel tank (inside building) | | NA |
| Wood stove or fireplace | | NA |
| New furniture / upholstery | | |
| New carpeting / flooring | | NA |
| Hobbies - glues, paints, etc. | | |

Part V – Miscellaneous Items

Do any occupants of the building smoke? *Yes / No* How often? _____

Last time someone smoked in the building? _____ hours / days ago

Does the building have an attached garage directly connected to living space? Yes / No

If so, is a car usually parked in the garage? Yes / No

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? Yes / No

Do the occupants of the building have their clothes dry cleaned? *Yes* No

If yes, how often? _____ weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? *Yes / No*

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? *Yes / No*

Have any pesticides/herbicides been applied around the building or in the yard? *Yes / No*

If so, when and which chemicals? _____

Has there ever been a fire in the building? *Yes / No* If yes, when? _____

Has painting or staining been done in the building in the last 6 months? *Yes / No*

If yes, when _____ and where? _____

Part VI – Sampling Information

Sample Technician: _____ Phone number: () _____ - _____

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

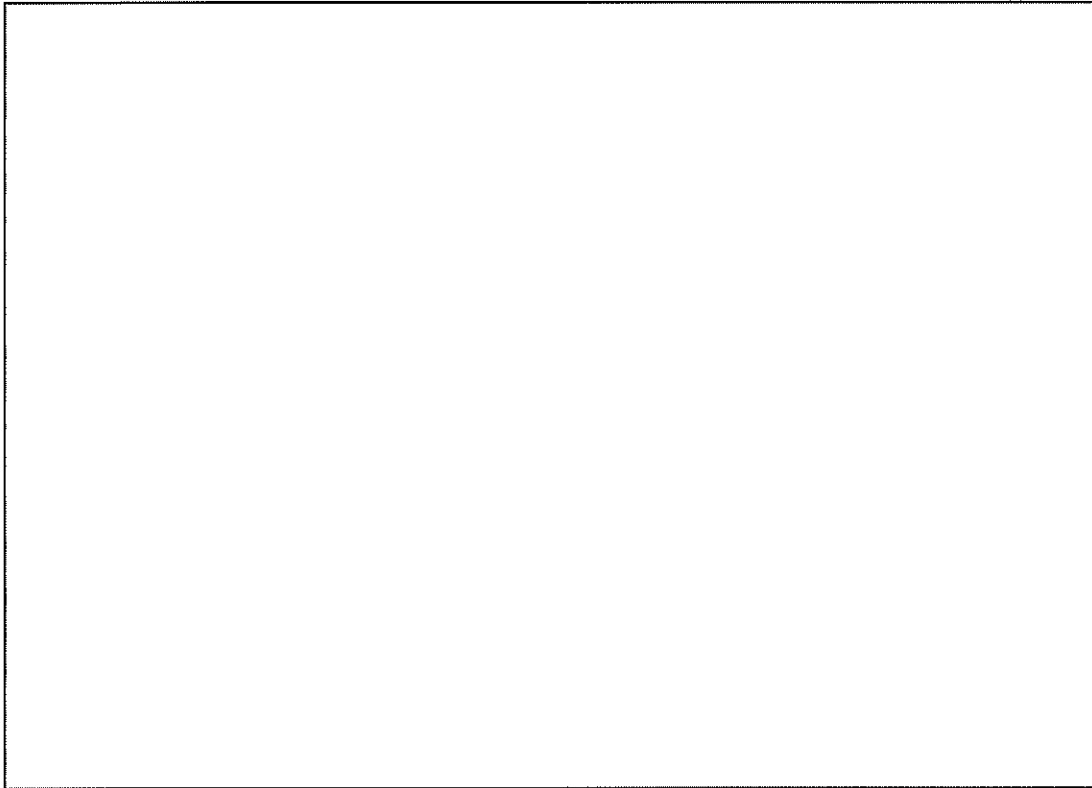
Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: _____

Sample locations (floor, room):

Field ID # _____ - _____ Field ID # _____ - _____

Field ID # _____ - _____ Field ID # _____ - _____

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event? *Yes / No*

Describe the general weather conditions: _____

Part VIII – General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

INDOOR AIR BUILDING SURVEY
AND SAMPLING FORM

Preparer's name: Bethany Gatz Date: June 2, 2020
Preparer's affiliation: _____ Phone #: _____
Site Name: TCE Clinton Engines Project #: _____

Part I - Occupants

Building Address: [redacted] S Otto Street
Property Contact: [redacted] Owner / Renter / other: _____
Contact's Phone: home () _____ work () _____ cell [redacted]
of Building occupants: Adults _____ Other _____

Part II - Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial

Describe building: 24 story - white Year constructed: _____

Sensitive population: day care / nursing home / hospital / school / other (specify): NA

Number of floors below grade: 1 (full basement / crawl space / slab on grade)

Number of floors at or above grade: 42

Depth of basement below grade surface: 10 ft. Basement size: _____ ft²

Basement floor construction: concrete / dirt / floating / stone / other (specify): _____

Foundation walls: poured concrete / cinder blocks / stone / other (specify): _____

Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No

Type of heating system (circle all that apply):

| | | | |
|----------------------------|---------------------|-----------------|--------------------|
| <u>hot air circulation</u> | hot air radiation | wood | steam radiation |
| heat pump | hot water radiation | kerosene heater | electric baseboard |
| other (specify): _____ | | | |

Type of ventilation system (circle all that apply):

| | | | |
|---------------------------------|------------------------|---------------------------|----------------|
| <u>central air conditioning</u> | mechanical fans | bathroom ventilation fans | individual air |
| window air conditioning units | kitchen range hood fan | outside air intake | |
| other (specify): _____ | | | |

Type of fuel utilized (circle all that apply):

Natural gas / electric / fuel oil / wood / coal / solar / kerosene

Are the basement walls or floor sealed with waterproof paint or epoxy coatings? Yes / No

Is there a whole house fan? *Yes / No*

Septic system? *Yes / Yes (but not used) / No*

Irrigation/private well? *Yes / Yes (but not used) / No*

Type of ground cover outside of building: *grass* / concrete / asphalt / other (specify) _____

Existing subsurface depressurization (radon) system in place? *Yes / No* *active / passive*

Sub-slab vapor/moisture barrier in place? *Yes / No*
 Type of barrier: _____

Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): *NA*

Heavy vehicular traffic nearby (or other mobile sources): *NA*

Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources | Location(s) | Removed (Yes / No / NA) |
|-------------------------------|-------------|----------------------------|
| Gasoline storage cans | | |
| Gas-powered equipment | | |
| Kerosene storage cans | | |
| Paints / thinners / strippers | | |
| Cleaning solvents | | |
| Oven cleaners | | |
| Carpet / upholstery cleaners | | |
| Other house cleaning products | | |
| Moth balls | | |
| Polishes / waxes | | |
| Insecticides | | |
| Furniture / floor polish | | |
| Nail polish / polish remover | | |
| Hairspray | | |
| Cologne / perfume | | |
| Air fresheners | | |
| Fuel tank (inside building) | | NA |
| Wood stove or fireplace | | NA |
| New furniture / upholstery | | |
| New carpeting / flooring | | NA |
| Hobbies - glues, paints, etc. | | |

Part V – Miscellaneous Items

Do any occupants of the building smoke? Yes No How often? _____

Last time someone smoked in the building? _____ hours / days ago

Does the building have an attached garage directly connected to living space? Yes No

If so, is a car usually parked in the garage? Yes / No

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? Yes / No

Do the occupants of the building have their clothes dry cleaned? Yes / No

If yes, how often? weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? Yes / No

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Yes / No

Have any pesticides/herbicides been applied around the building or in the yard? Yes / No

If so, when and which chemicals? _____

Has there ever been a fire in the building? Yes / No If yes, when? _____

Has painting or staining been done in the building in the last 6 months? Yes / No

If yes, when _____ and where? _____

Part VI – Sampling Information

Sample Technician: _____ Phone number: () _____ - _____

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

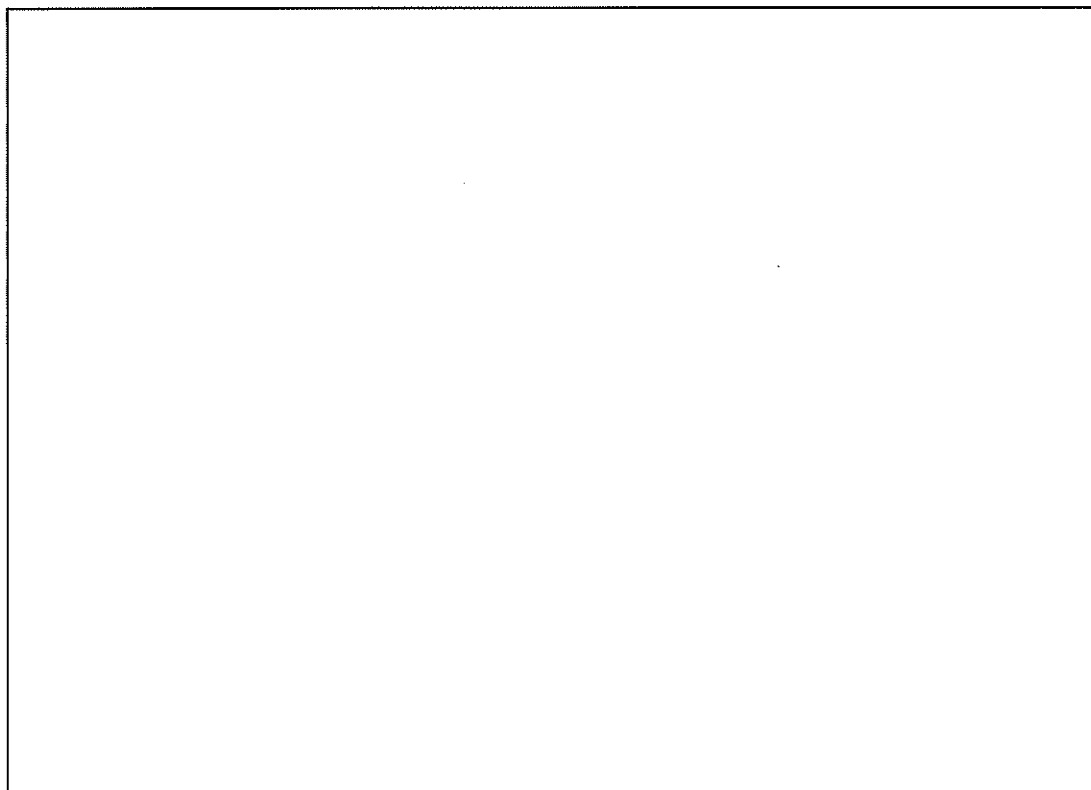
Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: _____

Sample locations (floor, room):

Field ID # _____ - _____ Field ID # _____ - _____

Field ID # _____ - _____ Field ID # _____ - _____

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event?

6/3/20 morning
Yes / No

Describe the general weather conditions: cloudy, hot, humid

Part VIII – General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

INDOOR AIR BUILDING SURVEY
AND SAMPLING FORM

Preparer's name: Bethany Gatz Date: June 8, 2020
Preparer's affiliation: Tetra Tech Phone #: _____
Site Name: TCE Clinton Engines Project #: _____

Part I - Occupants

Building Address: [REDACTED] Otto St.
Property Contact: [REDACTED] Owner / Renter / other: _____
Contact's Phone: home () _____ work () _____ cell [REDACTED]
of Building occupants: Adults 2 Other 2 children

Part II - Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial
Describe building: 2 story - light brown Year constructed: _____
Sensitive population: day care / nursing home / hospital / school / other (specify): NA
Number of floors below grade: 1 (full basement / crawl space / slab on grade)
Number of floors at or above grade: 2
Depth of basement below grade surface: 8 ft. Basement size: _____ ft²
Basement floor construction: concrete / dirt / floating / stone / other (specify): _____
Foundation walls: poured concrete / cinder blocks / stone / other (specify) brick
Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No
Type of heating system (circle all that apply):
hot air circulation hot air radiation wood steam radiation
heat pump hot water radiation kerosene heater electric baseboard
other (specify): _____
Type of ventilation system (circle all that apply):
central air conditioning mechanical fans bathroom ventilation fans individual air
window air conditioning units kitchen range hood fan outside air intake
other (specify): _____
Type of fuel utilized (circle all that apply):
Natural gas electric / fuel oil / wood / coal / solar / kerosene
Are the basement walls or floor sealed with waterproof paint or epoxy coatings? Yes / No

Is there a whole house fan? Yes / No

Septic system? Yes / Yes (but not used) / No

Irrigation/private well? Yes / Yes (but not used) / No

Type of ground cover outside of building: grass / concrete / asphalt / other (specify) _____

Existing subsurface depressurization (radon) system in place? Yes / No active / passive

Sub-slab vapor/moisture barrier in place? Yes / No

Type of barrier: _____

Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): NA

Heavy vehicular traffic nearby (or other mobile sources): NA

Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources | Location(s) | Removed (Yes / No / NA) |
|-------------------------------|-------------|----------------------------|
| Gasoline storage cans | | |
| Gas-powered equipment | | |
| Kerosene storage cans | | |
| Paints / thinners / strippers | | |
| Cleaning solvents | | |
| Oven cleaners | | |
| Carpet / upholstery cleaners | | |
| Other house cleaning products | | |
| Moth balls | | |
| Polishes / waxes | | |
| Insecticides | | |
| Furniture / floor polish | | |
| Nail polish / polish remover | | |
| Hairspray | | |
| Cologne / perfume | | |
| Air fresheners | | |
| Fuel tank (inside building) | | NA |
| Wood stove or fireplace | | NA |
| New furniture / upholstery | | |
| New carpeting / flooring | | NA |
| Hobbies - glues, paints, etc. | | |

Part V – Miscellaneous Items

Do any occupants of the building smoke? Yes / No How often? _____

Last time someone smoked in the building? _____ hours / days ago

Does the building have an attached garage directly connected to living space? Yes / No

If so, is a car usually parked in the garage? Yes / No

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? Yes / No

Do the occupants of the building have their clothes dry cleaned? Yes / No

If yes, how often? weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? Yes / No

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Yes / No

Have any pesticides/herbicides been applied around the building or in the yard? Yes / No

If so, when and which chemicals? _____

Has there ever been a fire in the building? Yes / No If yes, when? _____

Has painting or staining been done in the building in the last 6 months? Yes / No

If yes, when _____ and where? _____

Part VI – Sampling Information

Sample Technician: _____ Phone number: () _____ - _____

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

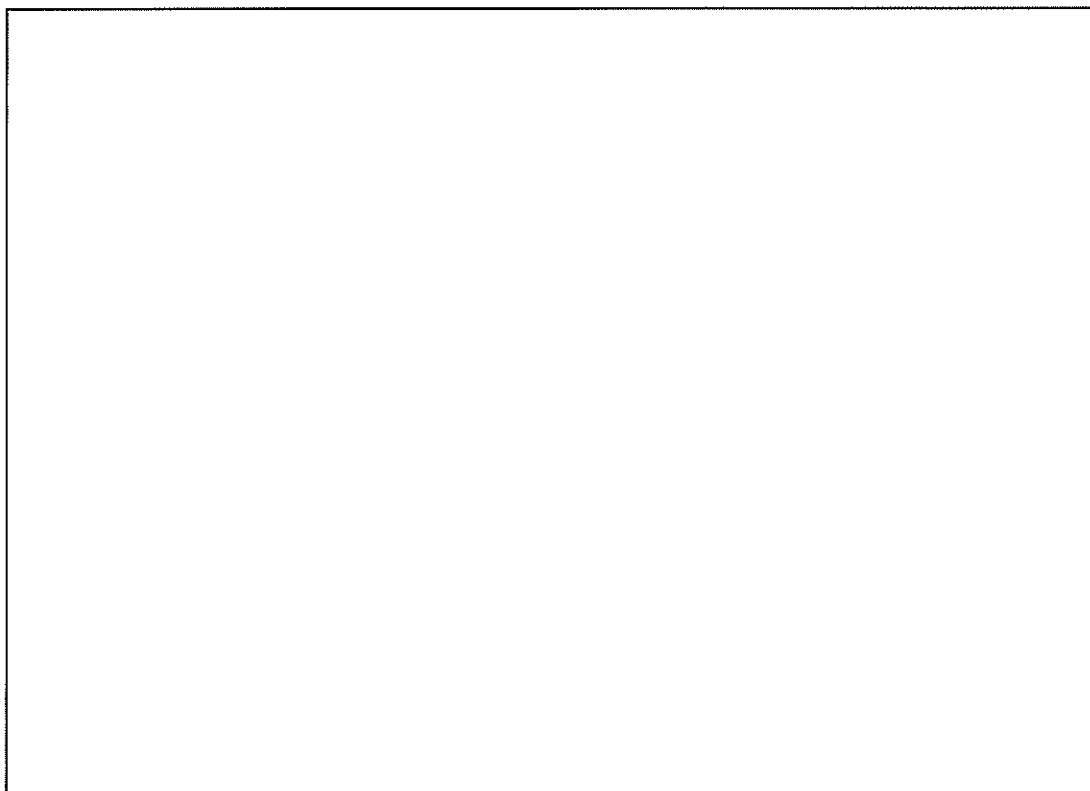
Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: _____

Sample locations (floor, room):

Field ID # _____ - _____ Field ID # _____ - _____

Field ID # _____ - _____ Field ID # _____ - _____

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event?

Yes *in morning* / No

Describe the general weather conditions: cloudy, hot, humid

Part VIII - General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

APPENDIX F

LABORATORY ANALYTICAL DATA AND CHAIN-OF-CUSTODY RECORDS FOR ANALYTICAL SERVICES REQUESTS 8537, 8595, 8612, 8778

**United States Environmental Protection Agency
Region 7
300 Minnesota Avenue
Kansas City, KS 66101**

Date: 06/11/2020

Subject: Transmittal of Sample Analysis Results for ASR #: 8537

Project ID: YSB7J7

Project Description: TCE-Clinton Engines

From: Margaret E.W. St. Germain, Chief
Laboratory Technology & Analysis Branch
Laboratory Services and Applied Sciences Division

To: Yvonne Smith
SEMD/AERR/RREP

Enclosed are the analytical data for the above-referenced Analytical Services Request (ASR) and Project. These results are based on samples as received at the Science and Technology Center. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please ensure that you file this electronic (.pdf only) transmittal in your records management system. The Regional Laboratory will now retain all of the original hardcopy documentation (e.g. COC[s] and the R7LIMS field sheet[s], etc.) according to our LSASD records management system.

Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. Please complete the Online ASR Sample/Data Disposition and Customer Survey for this ASR as soon as possible. The process of disposing of the samples for this ASR will be initiated 30 days from the date of this transmittal unless an alternate release date is specified on the Online ASR Sample/Data Disposition and Customer Survey. It is critical that we receive your response in accordance to RCRA and the laboratory accreditation.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295.

Project Manager: Yvonne Smith**Org:** SEMD/AERR/R
REP**Phone:** 913-551-7795**Project ID:** YSB7J7

2020080

Project Desc: TCE-Clinton Engines**QAPP Number:****Location:** Maquoketa**State:** Iowa**Program:** Superfund**Site Name:** TCE-CLINTON ENGINES - Site Evaluation/Disposition**Site ID:** B7J7 **Site OU:** 00**Purpose:** Site Cleanup Support**GPRA PRC:** 000DC6

TCE air monitoring and sub-slab soil sampling. Time critical removal assessment.

PM (YS) noted on the submitted ASR on 3/13/2020 that this site is not part of a litigation hold at this time.

GPRA/site code check (+OU) ok per DB on 3/13/2020.

Explanation of Codes, Units and Qualifiers used on this report

Sample QC Codes: QC Codes identify the type of sample for quality control purpose.

Units: Specific units in which results are reported.

___ = Field Sample

ug/m3 = Micrograms per Cubic Meter

inHg = Inch of Mercury

I.D. = Identification, Species or Other ID

Data Qualifiers: Specific codes used in conjunction with data values to provide additional information on the quality of reported results, or used to explain the absence of a specific value.

(Blank)= Values have been reviewed and found acceptable for use.

U = The analyte was not detected at or above the reporting limit.

ASR Number: 8537

Sample Information Summary

06/11/2020

Project ID: YSB7J7

Project Desc: TCE-Clinton Engines

| Sample No | QC Code | Matrix | Location Description | External Sample No | Start Date | Start Time | End Date | End Time | Receipt Date |
|-----------|---------|--------|------------------------------|--------------------|------------|------------|------------|----------|--------------|
| 1 - | --- | Air | █ S Matteson St, Indoor Air | | 06/01/2020 | 19:05 | 06/02/2020 | 17:24 | 06/05/2020 |
| 2 - | --- | Air | █ S Clark St, Indoor Air | | 06/02/2020 | 09:34 | 06/03/2020 | 08:20 | 06/05/2020 |
| 3 - | --- | Air | █ S Matteson St, Indoor Air | | 06/02/2020 | 10:16 | 06/03/2020 | 09:20 | 06/05/2020 |
| 4 - | --- | Air | █ S Matteson St, Ambient Air | | 06/02/2020 | 10:43 | 06/03/2020 | 09:56 | 06/05/2020 |
| 5 - | --- | Air | █ S Matteson St, Indoor Air | | 06/02/2020 | 11:42 | 06/03/2020 | 11:07 | 06/05/2020 |
| 6 - | --- | Air | █ S Clark St, Ambient Air | | 06/02/2020 | 12:24 | 06/03/2020 | 09:40 | 06/05/2020 |
| 7 - | --- | Air | █ S Clark St, Indoor Air | | 06/02/2020 | 12:28 | 06/03/2020 | 09:36 | 06/05/2020 |
| 8 - | --- | Air | █ E Maple St, Indoor Air | | 06/02/2020 | 14:06 | 06/03/2020 | 13:07 | 06/05/2020 |
| 9 - | --- | Air | █ S Matteson St, Indoor Air | | 06/02/2020 | 14:34 | 06/03/2020 | 13:39 | 06/05/2020 |
| 10 - | --- | Air | █ S Matteson St, Indoor Air | | 06/02/2020 | 15:00 | 06/03/2020 | 14:09 | 06/05/2020 |
| 11 - | --- | Air | █ S Otto St, Indoor Air | | 06/02/2020 | 15:43 | 06/03/2020 | 14:44 | 06/05/2020 |
| 12 - | --- | Air | █ S Otto St, Indoor Air | | 06/02/2020 | 16:08 | 06/03/2020 | 15:14 | 06/05/2020 |
| 13 - | --- | Air | █ E Platt St, Indoor Air | | 06/02/2020 | 16:41 | 06/03/2020 | 15:48 | 06/05/2020 |
| 14 - | --- | Air | █ E Platt St, Indoor Air | | 06/02/2020 | 17:07 | 06/03/2020 | 16:23 | 06/05/2020 |
| 15 - | --- | Air | █ S Matteson St, Indoor Air | | 06/02/2020 | 17:38 | 06/03/2020 | 16:56 | 06/05/2020 |
| 16 - | --- | Air | █ S Clark St, Sub-Slab | | 06/03/2020 | 08:47 | | | 06/05/2020 |
| 17 - | --- | Air | █ S Matteson St, Sub-Slab | | 06/03/2020 | 09:19 | | | 06/05/2020 |
| 18 - | --- | Air | █ S Matteson St, Sub-Slab | | 06/03/2020 | 11:19 | | | 06/05/2020 |
| 19 - | --- | Air | █ E Maple St, Sub-Slab | | 06/03/2020 | 13:10 | | | 06/05/2020 |
| 20 - | --- | Air | █ S Matteson St, Sub-Slab | | 06/03/2020 | 14:35 | | | 06/05/2020 |
| 21 - | --- | Air | █ S Otto St, Sub-Slab | | 06/03/2020 | 15:00 | | | 06/05/2020 |
| 22 - | --- | Air | █ E Platt St, Sub-Slab | | 06/03/2020 | 14:34 | | | 06/05/2020 |
| 23 - | --- | Air | █ S Matteson St, Sub-Slab | | 06/03/2020 | 17:02 | | | 06/05/2020 |
| 24 - | --- | Air | █ S Matteson St, Sub-Slab | | 06/03/2020 | 17:41 | | | 06/05/2020 |
| 25 - | --- | Air | █ S Matteson St, Sub-Slab | | 06/03/2020 | 18:05 | | | 06/05/2020 |

Analysis Comments About Results For This Analysis

1 Air VOA Field Parameters

Lab: (Field Measurement)**Method:** Measurement of field parameter

Samples: 1-__ 2-__ 3-__ 4-__ 5-__ 6-__ 7-__
8-__ 9-__ 10-__ 11-__ 12-__ 13-__ 14-__
15-__ 16-__ 17-__ 18-__ 19-__ 20-__ 21-__
22-__ 23-__ 24-__ 25-__

Comments:

(N/A)

1 VOCs in Air Samples in Canisters at Ambient Levels by GC/MS

Lab: Region 7 EPA Laboratory - Kansas City, Ks.**Method:** EPA Region 7 RLAB Method 3230.4I

Samples: 1-__ 2-__ 3-__ 4-__ 5-__ 6-__ 7-__
8-__ 9-__ 10-__ 11-__ 12-__ 13-__ 14-__
15-__ 16-__ 17-__ 18-__ 19-__ 20-__ 21-__
22-__ 23-__ 24-__ 25-__

Comments:

All field samples were analyzed and reported from 1:10 dilutions. This increased the reporting limits by a factor of 10 for samples 1-25. These dilutions were performed to meet the quick turn-around-time requested for this activity. The reporting limits from the dilutions reported met the detection level of less than 2.0 ug/m3 for Trichloroethene requested for this activity.

ASR Number: 8537

RLAB Approved Sample Analysis Results

06/11/2020

Project ID: YSB7J7

Project Desc: TCE-Clinton Engines

| Analysis/ Analyte | Units | 1-__ | 2-__ | 3-__ | 4-__ |
|---|-------|-------|-------|-------|-------|
| 1 Air VOA Field Parameters | | | | | |
| Canister ID | I.D. | 4571 | 30369 | L5205 | R2226 |
| Regulator ID | I.D. | 51 | 58 | 48 | 47 |
| Starting Pressure | inHg | -30 | -29.5 | -29.5 | -30 |
| Ending Pressure | inHg | 0 | -5 | -5 | -3 |
| 1 VOCs in Air Samples in Canisters at Ambient Levels by GC/MS | | | | | |
| Trichloroethene | ug/m3 | 1.4 U | 1.4 U | 1.4 U | 1.4 U |

ASR Number: 8537

RLAB Approved Sample Analysis Results

06/11/2020

Project ID: YSB7J7

Project Desc: TCE-Clinton Engines

| Analysis/ Analyte | Units | 5-__ | 6-__ | 7-__ | 8-__ |
|---|-------|-------|-------|-------|-------|
| 1 Air VOA Field Parameters | | | | | |
| Canister ID | I.D. | R0498 | L5198 | 4568 | 4559 |
| Regulator ID | I.D. | 46 | 45 | 23 | 15 |
| Starting Pressure | inHg | -29.5 | -26.5 | -30 | -28.5 |
| Ending Pressure | inHg | -3 | -2.5 | -5.5 | -3 |
| 1 VOCs in Air Samples in Canisters at Ambient Levels by GC/MS | | | | | |
| Trichloroethene | ug/m3 | 1.4 U | 1.4 U | 1.4 U | 1.4 U |

ASR Number: 8537

RLAB Approved Sample Analysis Results

06/11/2020

Project ID: YSB7J7

Project Desc: TCE-Clinton Engines

| Analysis/ Analyte | Units | 9-__ | 10-__ | 11-__ | 12-__ |
|---|-------|-------|-------|-------|-------|
| 1 Air VOA Field Parameters | | | | | |
| Canister ID | I.D. | 14976 | 3013 | L5203 | L5110 |
| Regulator ID | I.D. | 13 | 14 | 180 | 176 |
| Starting Pressure | inHg | -30 | -30 | -27 | -30 |
| Ending Pressure | inHg | -7 | -9 | 0 | -6 |
| 1 VOCs in Air Samples in Canisters at Ambient Levels by GC/MS | | | | | |
| Trichloroethene | ug/m3 | 1.4 U | 1.4 U | 1.4 U | 1.4 U |

ASR Number: 8537

RLAB Approved Sample Analysis Results

06/11/2020

Project ID: YSB7J7

Project Desc: TCE-Clinton Engines

| Analysis/ Analyte | Units | 13-__ | 14-__ | 15-__ | 16-__ |
|---|-------|-------|-------|-------|-------|
| 1 Air VOA Field Parameters | | | | | |
| Canister ID | I.D. | 2996 | 3022 | R0499 | L5111 |
| Regulator ID | I.D. | 166 | 165 | 103 | NA |
| Starting Pressure | inHg | -30 | -30 | -29.5 | -30 |
| Ending Pressure | inHg | -4 | -3 | -4.5 | -2 |
| 1 VOCs in Air Samples in Canisters at Ambient Levels by GC/MS | | | | | |
| Trichloroethene | ug/m3 | 1.9 | 1.4 U | 1.4 U | 1.4 U |

ASR Number: 8537

RLAB Approved Sample Analysis Results

06/11/2020

Project ID: YSB7J7

Project Desc: TCE-Clinton Engines

| Analysis/ Analyte | Units | 17-__ | 18-__ | 19-__ | 20-__ |
|---|-------|-------|-------|-------|-------|
| 1 Air VOA Field Parameters | | | | | |
| Canister ID | I.D. | 2998 | 3020 | 899 | 3255 |
| Regulator ID | I.D. | NA | NA | NA | NA |
| Starting Pressure | inHg | -30 | -30 | -30 | -30 |
| Ending Pressure | inHg | -3 | -5 | -5 | -5 |
| 1 VOCs in Air Samples in Canisters at Ambient Levels by GC/MS | | | | | |
| Trichloroethene | ug/m3 | 1.4 U | 1.4 U | 1.4 U | 1.4 U |

ASR Number: 8537

RLAB Approved Sample Analysis Results

06/11/2020

Project ID: YSB7J7

Project Desc: TCE-Clinton Engines

| Analysis/ Analyte | Units | 21-__ | 22-__ | 23-__ | 24-__ |
|---|-------|-------|-------|-------|-------|
| 1 Air VOA Field Parameters | | | | | |
| Canister ID | I.D. | 30372 | 3261 | 3249 | 4558 |
| Regulator ID | I.D. | NA | NA | NA | NA |
| Starting Pressure | inHg | -29.5 | -30 | -30 | -30 |
| Ending Pressure | inHg | -3 | -6 | -3 | -10 |
| 1 VOCs in Air Samples in Canisters at Ambient Levels by GC/MS | | | | | |
| Trichloroethene | ug/m3 | 1.4 U | 1.4 U | 1.4 U | 1.4 U |

ASR Number: 8537

RLAB Approved Sample Analysis Results

06/11/2020

Project ID: YSB7J7

Project Desc: TCE-Clinton Engines

| Analysis/ Analyte | Units | 25-__ |
|---|-------|-------|
| 1 Air VOA Field Parameters | | |
| Canister ID | I.D. | 3239 |
| Regulator ID | I.D. | NA |
| Starting Pressure | inHg | -30 |
| Ending Pressure | inHg | -12 |
| 1 VOCs in Air Samples in Canisters at Ambient Levels by GC/MS | | |
| Trichloroethene | ug/m3 | 3.1 |

**CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII**

| | | | |
|--|--|--|------------------------|
| EPA PROJECT MANAGER (Print) Yvonne Smith | SITE OR SAMPLING EVENT TCE Clinton Engines | DATE OF SAMPLE COLLECTION(S) 6 MONTH 1-3 DAY 2020 YEAR | SHEET 1 of 2 |
|--|--|--|------------------------|

CONTENTS OF SHIPMENT

| ASR AND SAMPLE NUMBER | TYPE OF CONTAINERS | | | | | SAMPLED MEDIA | | | | | RECEIVING LABORATORY REMARKS OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.) |
|-----------------------------|---|--------------------------------|-------------|-------------------------|--|---------------|-------|-----------|-----|-------|---|
| | 1 L PLASTIC BOTTLE | 6 L Summa BOTTLE | 10 L BOTTLE | VOA SET (3 VIALS EA) | | WATER | SOLID | NOX WASTE | AIR | OTHER | |
| | NUMBER(S) OF CONTAINERS PER SAMPLE NUMBER | | | | | | | | | | |
| 8537-1 | | 1 | | | | | | | ✓ | | Quick TAT (3-5 days) |
| 8537-2 | | 1 | | | | | | | ✓ | | Quick TAT (3-5 days) |
| 8537-3 | | 1 | | | | | | | ✓ | | Quick TAT (3-5 days) |
| 8537-4 | | 1 | | | | | | | ✓ | | |
| 8537-5 | | 1 | | | | | | | ✓ | | Quick TAT (3-5 days) |
| 8537-6 | | 1 | | | | | | | ✓ | | |
| 8537-7 | | 1 | | | | | | | ✓ | | |
| 8537-8 | | 1 | | | | | | | ✓ | | Quick TAT (3-5 days) |
| 8537-9 | | 1 | | | | | | | ✓ | | |
| 8537-10 | | 1 | | | | | | | ✓ | | Quick TAT (3-5 days) |
| 8537-11 | | 1 | | | | | | | ✓ | | |
| 8537-12 | | 1 | | | | | | | ✓ | | |
| 8537-13 | | 1 | | | | | | | ✓ | | |
| 8537-14 | | 1 | | | | | | | ✓ | | |
| 8537-15 | | 1 | | | | | | | ✓ | | Quick TAT (3-5 days) |
| 8537-16 | | 1 | | | | | | | ✓ | | Quick TAT (3-5 days) |
| 8537-17 | | 1 | | | | | | | ✓ | | Quick TAT (3-5 days) |
| 8537-18 | | 1 | | | | | | | ✓ | | Quick TAT (3-5 days) |
| 8537-19 | | 1 | | | | | | | ✓ | | Quick TAT (3-5 days) |
| 8537-20 | | 1 | | | | | | | ✓ | | Quick TAT (3-5 days) |
| 8537-21 | | 1 | | | | | | | ✓ | | |
| 8537-22 | | 1 | | | | | | | ✓ | | |
| 8537-23 | | 1 | | | | | | | ✓ | | Quick TAT (3-5 days) |
| 8537-24 | | 1 | | | | | | | ✓ | | |

| | |
|---|---|
| DESCRIPTION OF SHIPMENT 25 CONTAINER(S) CONSISTING OF 5 CRATE(S) ICE CHEST(S): OTHER | MODE OF SHIPMENT <input type="checkbox"/> COMMERCIAL CARRIER <input checked="" type="checkbox"/> SAMPLER CONVEYED (SHIPPING AIRBILL NUMBER) |
|---|---|

PERSONNEL CUSTODY RECORD

| | | | | | | |
|---|------|------|--|------|------|------------------------------|
| RELINQUISHED BY (PWSAMPLER) bethany.gatz@tetratech.com <small>Digitally signed by bethany.gatz@tetratech.com DN: CN = bethany.gatz@tetratech.com Date: 2020.05.0 16:23: 7 -05'00'</small> | DATE | TIME | RECEIVED BY NICOLE ROBLESZ <small>Digitally signed by NICOLE ROBLESZ Date: 2020.05.05 09:04:45 -05'00'</small> | DATE | TIME | REASON FOR CHANGE OF CUSTODY |
| <input checked="" type="radio"/> SEALED <input type="radio"/> UNSEALED | | | <input checked="" type="radio"/> SEALED <input type="radio"/> UNSEALED | | | STC Analyses |
| RELINQUISHED BY (PWSAMPLER) | DATE | TIME | RECEIVED BY | DATE | TIME | REASON FOR CHANGE OF CUSTODY |
| <input type="radio"/> SEALED <input type="radio"/> UNSEALED | | | <input type="radio"/> SEALED <input type="radio"/> UNSEALED | | | |
| RELINQUISHED BY (PWSAMPLER) | DATE | TIME | RECEIVED BY | DATE | TIME | REASON FOR CHANGE OF CUSTODY |
| <input type="radio"/> SEALED <input type="radio"/> UNSEALED | | | <input type="radio"/> SEALED <input type="radio"/> UNSEALED | | | |
| RELINQUISHED BY (PWSAMPLER) | DATE | TIME | RECEIVED BY | DATE | TIME | REASON FOR CHANGE OF CUSTODY |
| <input type="radio"/> SEALED <input type="radio"/> UNSEALED | | | <input type="radio"/> SEALED <input type="radio"/> UNSEALED | | | |

| | | | | | |
|---|---|--|-----------------|--|--|
| EPA PROJECT MANAGER (Print) Yvonne Smith | SITE OR SAMPLING EVENT TCE Clinton Engines | DATE OF SAMPLE COLLECTION(S) 6 1-3 2020 MONTH DAY YEAR | SHEET 2 of 2 | | |
|---|---|--|-----------------|--|--|

[illegible]

nr6/5/2020

| | |
|---|--|
| 25 CONTAINER(S) CONSISTING OF 5 CRATE(S) ICE CHEST(S): OTHER | <input type="checkbox"/> COMMERCIAL CARRIER <input checked="" type="checkbox"/> SAMPLER CONVEYED <div style="text-align: right;">(SHIPPING AIRBILL NUMBER)</div> |
|---|--|

| | | | | | | | | |
|---|----------|------|------|---|----------|------|------|------------------------------|
| RELINQUISHED BY (PWSAMPLER) bethany.gatz@tetrattech.com <small>Digitally signed by: bethany.gatz@tetrattech.com DN: CN = bethany.gatz@tetrattech.com Date: 2020.06.0 16:25:10 -0500</small> | | DATE | TIME | RECEIVED BY NICOLE ROBIEZ <small>Digitally signed by NICOLE ROBIEZ Date: 2020.06.05 09:44:11 -0500</small> | | DATE | TIME | REASON FOR CHANGE OF CUSTODY |
| SEALED | UNSEALED | | | SEALED | UNSEALED | | | STC Analyses |
| RELINQUISHED BY (PWSAMPLER) | | DATE | TIME | RECEIVED BY | | DATE | TIME | REASON FOR CHANGE OF CUSTODY |
| SEALED | UNSEALED | | | SEALED | UNSEALED | | | |
| RELINQUISHED BY (PWSAMPLER) | | DATE | TIME | RECEIVED BY | | DATE | TIME | REASON FOR CHANGE OF CUSTODY |
| SEALED | UNSEALED | | | SEALED | UNSEALED | | | |
| RELINQUISHED BY (PWSAMPLER) | | DATE | TIME | RECEIVED BY | | DATE | TIME | REASON FOR CHANGE OF CUSTODY |
| SEALED | UNSEALED | | | SEALED | UNSEALED | | | Page 13 of 13 |

**United States Environmental Protection Agency
Region 7
300 Minnesota Avenue
Kansas City, KS 66101**

Date: 08/20/2020

Subject: Transmittal of Sample Analysis Results for ASR #: 8595

Project ID: YSB7J7

Project Description: TCE-Clinton Engines

From: Margaret E.W. St. Germain, Chief
Laboratory Technology & Analysis Branch
Laboratory Services and Applied Sciences Division

To: Yvonne Smith
SEMD/AERR/RREP

Enclosed are the analytical data for the above-referenced Analytical Services Request (ASR) and Project. These results are based on samples as received at the Science and Technology Center. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please ensure that you file this electronic (.pdf only) transmittal in your records management system. The Regional Laboratory will now retain all of the original hardcopy documentation (e.g. COC[s] and the R7LIMS field sheet[s], etc.) according to our LSASD records management system.

Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. Please complete the Online ASR Sample/Data Disposition and Customer Survey for this ASR as soon as possible. The process of disposing of the samples for this ASR will be initiated 30 days from the date of this transmittal unless an alternate release date is specified on the Online ASR Sample/Data Disposition and Customer Survey. It is critical that we receive your response in accordance to RCRA and the laboratory accreditation.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295.

Project Manager: Yvonne Smith**Org:** SEMD/AERR/R
REP**Phone:** 913-551-7795**Project ID:** YSB7J7

2020109

Project Desc: TCE-Clinton Engines**QAPP Number:****Location:** Maquoketa**State:** Iowa**Program:** Superfund**Site Name:** TCE-CLINTON ENGINES - Site Evaluation/Disposition**Site ID:** B7J7 **Site OU:** 00**Purpose:** Site Cleanup Support**GPRA PRC:** 000DC6

Site cleanup support GW and soil sampling.

GPRA/site code (+OU) check per DB on 6/1/2020.

Submitted ASR from the PM (YS)/TT/START contractor dated 6/1/2020 noted that this ASR is not part of a litigation hold activity at this time.

Explanation of Codes, Units and Qualifiers used on this report**Sample QC Codes:** QC Codes identify the type of sample for quality control purpose.**Units:** Specific units in which results are reported.

___ = Field Sample

ug/L = Micrograms per Liter

FB = Field Blank

ug/kg = Micrograms per Kilogram

FD = Field Duplicate

Data Qualifiers: Specific codes used in conjunction with data values to provide additional information on the quality of reported results, or used to explain the absence of a specific value.

(Blank) = Values have been reviewed and found acceptable for use.

J = The identification of the analyte is acceptable; the reported value is an estimate.

U = The analyte was not detected at or above the reporting limit.

UJ = The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

ASR Number: 8595**Sample Information Summary****08/20/2020****Project ID: YSB7J7****Project Desc: TCE-Clinton Engines**

| Sample No | QC Code | Matrix | Location Description | External Sample No | Start Date | Start Time | End Date | End Time | Receipt Date |
|-----------|---------|--------|----------------------------------|--------------------|------------|------------|----------|----------|--------------|
| 1 - ___ | | Solid | SB-01-0910-072220 | | 07/22/2020 | 09:34 | | | 07/23/2020 |
| 2 - ___ | | Solid | SB-01-1516-072220 | | 07/22/2020 | 09:50 | | | 07/23/2020 |
| 3 - ___ | | Solid | SB-02-0910-072220 | | 07/22/2020 | 10:15 | | | 07/23/2020 |
| 4 - ___ | | Solid | SB-02-1516-072220 | | 07/22/2020 | 10:30 | | | 07/23/2020 |
| 5 - ___ | | Solid | SB-03-0910-072220 | | 07/22/2020 | 10:55 | | | 07/23/2020 |
| 5 - FD | | Solid | SB-03-0910-072220-FD | | 07/22/2020 | 10:58 | | | 07/23/2020 |
| 7 - ___ | | Solid | SB-03-1516-072220 | | 07/22/2020 | 11:15 | | | 07/23/2020 |
| 8 - ___ | | Solid | SB-04-0910-072220 | | 07/22/2020 | 11:30 | | | 07/23/2020 |
| 9 - ___ | | Solid | SB-04-1516-072220 | | 07/22/2020 | 11:50 | | | 07/23/2020 |
| 10 - ___ | | Solid | SB-05-0910-072220 | | 07/22/2020 | 12:15 | | | 07/23/2020 |
| 11 - ___ | | Solid | SB-05-1516-072220 | | 07/22/2020 | 12:25 | | | 07/23/2020 |
| 12 - ___ | | Solid | SB-06-0809-072220 | | 07/22/2020 | 12:54 | | | 07/23/2020 |
| 13 - ___ | | Solid | SB-06-1516-072220 | | 07/22/2020 | 13:00 | | | 07/23/2020 |
| 101 - ___ | | Water | ████████ Hwy 62 - Private Well | | 07/21/2020 | 11:27 | | | 07/23/2020 |
| 102 - ___ | | Water | ████████ Pershing - Private Well | | 07/21/2020 | 13:50 | | | 07/23/2020 |
| 102 - FD | | Water | ████████ Pershing - Private Well | | 07/21/2020 | 13:55 | | | 07/23/2020 |
| 104 - ___ | | Water | ████████ Pershing - Private Well | | 07/21/2020 | 14:10 | | | 07/23/2020 |
| 105 - ___ | | Water | ████████ Hwy 62 - Private Well | | 07/21/2020 | 14:25 | | | 07/23/2020 |
| 106 - ___ | | Water | ████████ Hwy 64 - Private Well | | 07/21/2020 | 16:18 | | | 07/23/2020 |
| 107 - ___ | | Water | City Well 4 | | 07/22/2020 | 14:40 | | | 07/23/2020 |
| 108 - ___ | | Water | City Well 5 | | 07/22/2020 | 15:00 | | | 07/23/2020 |
| 109 - ___ | | Water | City Well 6 | | 07/22/2020 | 15:15 | | | 07/23/2020 |
| 110 - FB | | Water | LDL VOA Field Blank sample | | 07/22/2020 | 15:20 | | | 07/23/2020 |

Analysis Comments About Results For This Analysis

1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap**Lab:** Contract Lab Program (Out-Source)**Method:** CLP Statement of Work**Basis:** Dry**Samples:** 1-__ 2-__ 3-__ 4-__ 5-__ 5-FD 7-__
 8-__ 9-__ 10-__ 11-__ 12-__ 13-__**Comments:**

Acetone was J-coded in samples -1, -2, -5, -5FD. Acetone and 2-Butanone were J-coded in sample -7. Although the analytes in question have been positively identified in the samples, the quantitation is an estimate (J-coded) due to high recovery of a surrogate analyte in these samples. The actual concentration for these analytes may be lower than the reported values.

1,1,2-Trichloroethane, cis-1,3-Dichloropropene and trans-1,3-Dichloropropene were UJ-coded in all field samples. These analytes were not found in the samples at or above the reporting limits; however, the reporting limits are an estimate (UJ-coded) due to the initial instrument calibration curve not meeting average RRF specifications. The actual reporting limits may be higher

1,1,2-Trichloroethane, cis-1,3-Dichloropropene and trans-1,3-Dichloropropene were UJ-coded in all field samples. These analytes were not found in the samples at or above the reporting limits; however, the reporting limits are an estimate (UJ-coded) due to the continuing calibration check not meeting RRF specifications. The actual reporting limits for these analytes may be higher than the reported values.

Slight Methylene Chloride contamination was found in the laboratory method blank below the CRQL. Only samples containing this analyte at a level greater than ten times the contamination level of the blank are reported without being qualified. All samples that contained this analyte but at a level less than ten times the contamination in the blank have the result U-coded indicating that the reporting limit has been raised to the level found in the sample. Methylene Chloride was U-coded in samples -3 and -5.

1 VOCs in Water by GC/MS for Low Detection Limits**Lab:** Contract Lab Program (Out-Source)**Method:** CLP Statement of Work**Samples:** 101-__ 102-__ 102-FD 104-__ 105-__ 106-__ 107-__
 108-__ 109-__ 110-FB**Comments:**

Cis-1,2 Dichloroethene, trans-1,2-Dichloroethene and 1,1-Dichloroethene were UJ-coded in sample -106. These analytes were not found in the sample at or above the reporting limits; however, the reporting limits are an estimate (UJ-coded) due to low recovery of the surrogate analyte. The actual reporting limits for these analytes may be higher than the reported values.

| Analysis/ Analyte | Units | 1-__ | 2-__ | 3-__ | 4-__ |
|---|-------|--------|--------|--------|--------|
| 1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap | | | | | |
| Acetone | ug/kg | 62 J | 32 J | 28 | 18 |
| Benzene | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| Bromochloromethane | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| Bromodichloromethane | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| Bromoform | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| Bromomethane | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| 2-Butanone | ug/kg | 11 U | 14 U | 13 U | 11 U |
| Carbon Disulfide | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| Carbon Tetrachloride | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| Chlorobenzene | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| Chloroethane | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| Chloroform | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| Chloromethane | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| Cyclohexane | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| 1,2-Dibromo-3-Chloropropane | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| Dibromochloromethane | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| 1,2-Dibromoethane | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| 1,2-Dichlorobenzene | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| 1,3-Dichlorobenzene | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| 1,4-Dichlorobenzene | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| Dichlorodifluoromethane | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| 1,1-Dichloroethane | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| 1,2-Dichloroethane | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| 1,1-Dichloroethene | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| cis-1,2-Dichloroethene | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| trans-1,2-Dichloroethene | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| 1,2-Dichloropropane | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| cis-1,3-Dichloropropene | ug/kg | 5.6 UJ | 7.1 UJ | 6.4 UJ | 5.3 UJ |
| trans-1,3-Dichloropropene | ug/kg | 5.6 UJ | 7.1 UJ | 6.4 UJ | 5.3 UJ |
| Ethyl Benzene | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| 2-Hexanone | ug/kg | 11 U | 14 U | 13 U | 11 U |
| Isopropylbenzene | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| Methyl Acetate | ug/kg | 14 | 17 | 11 | 5.3 U |
| Methyl tert-butyl ether | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| Methylcyclohexane | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| Methylene Chloride | ug/kg | 5.6 U | 7.1 U | 6.7 U | 5.3 U |
| 4-Methyl-2-Pentanone | ug/kg | 11 U | 14 U | 13 U | 11 U |
| Styrene | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| 1,1,2,2-Tetrachloroethane | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| Tetrachloroethene | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| Toluene | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| 1,2,3-Trichlorobenzene | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| 1,2,4-Trichlorobenzene | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| 1,1,1-Trichloroethane | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| 1,1,2-Trichloroethane | ug/kg | 5.6 UJ | 7.1 UJ | 6.4 UJ | 5.3 UJ |

ASR Number: 8595

Project ID: YSB7J7

RLAB Approved Sample Analysis Results

Project Desc: TCE-Clinton Engines

08/20/2020

| Analysis/ Analyte | Units | 1-__ | 2-__ | 3-__ | 4-__ |
|--------------------------------|--------------|-------------|-------------|-------------|-------------|
| Trichloroethene | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| Trichlorofluoromethane | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| 1,1,2-Trichlorotrifluoroethane | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| Vinyl Chloride | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| m and/or p-Xylene | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |
| o-Xylene | ug/kg | 5.6 U | 7.1 U | 6.4 U | 5.3 U |

| Analysis/ Analyte | Units | 5-__ | 5-FD | 7-__ | 8-__ |
|---|-------|--------|--------|--------|--------|
| 1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap | | | | | |
| Acetone | ug/kg | 58 J | 41 J | 70 J | 35 |
| Benzene | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| Bromochloromethane | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| Bromodichloromethane | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| Bromoform | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| Bromomethane | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| 2-Butanone | ug/kg | 13 U | 13 U | 15 J | 12 U |
| Carbon Disulfide | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| Carbon Tetrachloride | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| Chlorobenzene | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| Chloroethane | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| Chloroform | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| Chloromethane | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| Cyclohexane | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| 1,2-Dibromo-3-Chloropropane | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| Dibromochloromethane | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| 1,2-Dibromoethane | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| 1,2-Dichlorobenzene | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| 1,3-Dichlorobenzene | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| 1,4-Dichlorobenzene | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| Dichlorodifluoromethane | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| 1,1-Dichloroethane | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| 1,2-Dichloroethane | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| 1,1-Dichloroethene | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| cis-1,2-Dichloroethene | ug/kg | 31 | 23 | 5.8 U | 5.9 U |
| trans-1,2-Dichloroethene | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| 1,2-Dichloropropane | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| cis-1,3-Dichloropropene | ug/kg | 6.3 UJ | 6.5 UJ | 5.8 UJ | 5.9 UJ |
| trans-1,3-Dichloropropene | ug/kg | 6.3 UJ | 6.5 UJ | 5.8 UJ | 5.9 UJ |
| Ethyl Benzene | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| 2-Hexanone | ug/kg | 13 U | 13 U | 12 U | 12 U |
| Isopropylbenzene | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| Methyl Acetate | ug/kg | 12 | 6.7 | 5.8 | 5.9 U |
| Methyl tert-butyl ether | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| Methylcyclohexane | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| Methylene Chloride | ug/kg | 6.4 U | 6.5 U | 5.8 U | 5.9 U |
| 4-Methyl-2-Pentanone | ug/kg | 13 U | 13 U | 12 U | 12 U |
| Styrene | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| 1,1,2,2-Tetrachloroethane | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| Tetrachloroethene | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| Toluene | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| 1,2,3-Trichlorobenzene | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| 1,2,4-Trichlorobenzene | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| 1,1,1-Trichloroethane | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| 1,1,2-Trichloroethane | ug/kg | 6.3 UJ | 6.5 UJ | 5.8 UJ | 5.9 UJ |

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| Analysis/ Analyte | Units | 5-__ | 5-FD | 7-__ | 8-__ |
|--------------------------------|-------|-------|-------|-------|-------|
| Trichloroethene | ug/kg | 73 | 61 | 5.8 U | 5.9 U |
| Trichlorofluoromethane | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| 1,1,2-Trichlorotrifluoroethane | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| Vinyl Chloride | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| m and/or p-Xylene | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |
| o-Xylene | ug/kg | 6.3 U | 6.5 U | 5.8 U | 5.9 U |

| Analysis/ Analyte | Units | 9-__ | 10-__ | 11-__ | 12-__ |
|---|-------|--------|--------|--------|--------|
| 1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap | | | | | |
| Acetone | ug/kg | 29 | 18 | 26 | 9.9 |
| Benzene | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| Bromochloromethane | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| Bromodichloromethane | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| Bromoform | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| Bromomethane | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| 2-Butanone | ug/kg | 14 U | 6.5 U | 12 U | 9.9 U |
| Carbon Disulfide | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| Carbon Tetrachloride | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| Chlorobenzene | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| Chloroethane | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| Chloroform | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| Chloromethane | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| Cyclohexane | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| 1,2-Dibromo-3-Chloropropane | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| Dibromochloromethane | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| 1,2-Dibromoethane | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| 1,2-Dichlorobenzene | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| 1,3-Dichlorobenzene | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| 1,4-Dichlorobenzene | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| Dichlorodifluoromethane | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| 1,1-Dichloroethane | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| 1,2-Dichloroethane | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| 1,1-Dichloroethene | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| cis-1,2-Dichloroethene | ug/kg | 180 | 3.3 U | 5.9 U | 5.0 U |
| trans-1,2-Dichloroethene | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| 1,2-Dichloropropane | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| cis-1,3-Dichloropropene | ug/kg | 6.9 UJ | 3.3 UJ | 5.9 UJ | 5.0 UJ |
| trans-1,3-Dichloropropene | ug/kg | 6.9 UJ | 3.3 UJ | 5.9 UJ | 5.0 UJ |
| Ethyl Benzene | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| 2-Hexanone | ug/kg | 14 U | 6.5 U | 12 U | 9.9 U |
| Isopropylbenzene | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| Methyl Acetate | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| Methyl tert-butyl ether | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| Methylcyclohexane | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| Methylene Chloride | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| 4-Methyl-2-Pentanone | ug/kg | 14 U | 6.5 U | 12 U | 9.9 U |
| Styrene | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| 1,1,2,2-Tetrachloroethane | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| Tetrachloroethene | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| Toluene | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| 1,2,3-Trichlorobenzene | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| 1,2,4-Trichlorobenzene | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| 1,1,1-Trichloroethane | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| 1,1,2-Trichloroethane | ug/kg | 6.9 UJ | 3.3 UJ | 5.9 UJ | 5.0 UJ |

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RLAB Approved Sample Analysis Results

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| Analysis/ Analyte | Units | 9-__ | 10-__ | 11-__ | 12-__ |
|--------------------------------|--------------|-------------|--------------|--------------|--------------|
| Trichloroethene | ug/kg | 3000 | 3.3 U | 5.9 U | 5.0 U |
| Trichlorofluoromethane | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| 1,1,2-Trichlorotrifluoroethane | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| Vinyl Chloride | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| m and/or p-Xylene | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |
| o-Xylene | ug/kg | 6.9 U | 3.3 U | 5.9 U | 5.0 U |

| Analysis/ Analyte | Units | 13-__ | 101-__ | 102-__ | 102-FD |
|---|-------|--------|--------|--------|--------|
| 1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap | | | | | |
| Acetone | ug/kg | 9.3 U | | | |
| Benzene | ug/kg | 4.7 U | | | |
| Bromochloromethane | ug/kg | 4.7 U | | | |
| Bromodichloromethane | ug/kg | 4.7 U | | | |
| Bromoform | ug/kg | 4.7 U | | | |
| Bromomethane | ug/kg | 4.7 U | | | |
| 2-Butanone | ug/kg | 9.3 U | | | |
| Carbon Disulfide | ug/kg | 4.7 U | | | |
| Carbon Tetrachloride | ug/kg | 4.7 U | | | |
| Chlorobenzene | ug/kg | 4.7 U | | | |
| Chloroethane | ug/kg | 4.7 U | | | |
| Chloroform | ug/kg | 4.7 U | | | |
| Chloromethane | ug/kg | 4.7 U | | | |
| Cyclohexane | ug/kg | 4.7 U | | | |
| 1,2-Dibromo-3-Chloropropane | ug/kg | 4.7 U | | | |
| Dibromochloromethane | ug/kg | 4.7 U | | | |
| 1,2-Dibromoethane | ug/kg | 4.7 U | | | |
| 1,2-Dichlorobenzene | ug/kg | 4.7 U | | | |
| 1,3-Dichlorobenzene | ug/kg | 4.7 U | | | |
| 1,4-Dichlorobenzene | ug/kg | 4.7 U | | | |
| Dichlorodifluoromethane | ug/kg | 4.7 U | | | |
| 1,1-Dichloroethane | ug/kg | 4.7 U | | | |
| 1,2-Dichloroethane | ug/kg | 4.7 U | | | |
| 1,1-Dichloroethene | ug/kg | 4.7 U | | | |
| cis-1,2-Dichloroethene | ug/kg | 13 | | | |
| trans-1,2-Dichloroethene | ug/kg | 4.7 U | | | |
| 1,2-Dichloropropane | ug/kg | 4.7 U | | | |
| cis-1,3-Dichloropropene | ug/kg | 4.7 UJ | | | |
| trans-1,3-Dichloropropene | ug/kg | 4.7 UJ | | | |
| Ethyl Benzene | ug/kg | 4.7 U | | | |
| 2-Hexanone | ug/kg | 9.3 U | | | |
| Isopropylbenzene | ug/kg | 4.7 U | | | |
| Methyl Acetate | ug/kg | 4.7 U | | | |
| Methyl tert-butyl ether | ug/kg | 4.7 U | | | |
| Methylcyclohexane | ug/kg | 4.7 U | | | |
| Methylene Chloride | ug/kg | 4.7 U | | | |
| 4-Methyl-2-Pentanone | ug/kg | 9.3 U | | | |
| Styrene | ug/kg | 4.7 U | | | |
| 1,1,2,2-Tetrachloroethane | ug/kg | 4.7 U | | | |
| Tetrachloroethene | ug/kg | 4.7 U | | | |
| Toluene | ug/kg | 4.7 U | | | |
| 1,2,3-Trichlorobenzene | ug/kg | 4.7 U | | | |
| 1,2,4-Trichlorobenzene | ug/kg | 4.7 U | | | |
| 1,1,1-Trichloroethane | ug/kg | 4.7 U | | | |
| 1,1,2-Trichloroethane | ug/kg | 4.7 UJ | | | |

| Analysis/ Analyte | Units | 13-__ | 101-__ | 102-__ | 102-FD |
|---|-------|-------|--------|--------|--------|
| Trichloroethene | ug/kg | 610 | | | |
| Trichlorofluoromethane | ug/kg | 4.7 U | | | |
| 1,1,2-Trichlorotrifluoroethane | ug/kg | 4.7 U | | | |
| Vinyl Chloride | ug/kg | 4.7 U | | | |
| m and/or p-Xylene | ug/kg | 4.7 U | | | |
| o-Xylene | ug/kg | 4.7 U | | | |
| 1 VOCs in Water by GC/MS for Low Detection Limits | | | | | |
| Acetone | ug/L | | 13 | 13 | 15 |
| Benzene | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| Bromochloromethane | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| Bromodichloromethane | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| Bromoform | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| Bromomethane | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| 2-Butanone | ug/L | | 5.0 U | 5.0 U | 5.0 U |
| Carbon Disulfide | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| Carbon Tetrachloride | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| Chlorobenzene | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| Chloroethane | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| Chloroform | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| Chloromethane | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| Cyclohexane | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| 1,2-Dibromo-3-Chloropropane | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| Dibromochloromethane | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| 1,2-Dibromoethane | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| 1,2-Dichlorobenzene | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| 1,3-Dichlorobenzene | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| 1,4-Dichlorobenzene | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| Dichlorodifluoromethane | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| 1,1-Dichloroethane | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| 1,2-Dichloroethane | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| 1,1-Dichloroethene | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| cis-1,2-Dichloroethene | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| trans-1,2-Dichloroethene | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| 1,2-Dichloropropane | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| cis-1,3-Dichloropropene | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| trans-1,3-Dichloropropene | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| Ethyl Benzene | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| 2-Hexanone | ug/L | | 5.0 U | 5.0 U | 5.0 U |
| Isopropylbenzene | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| Methyl Acetate | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| Methyl tert-butyl ether | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| Methylcyclohexane | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| Methylene Chloride | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| 4-Methyl-2-Pentanone | ug/L | | 5.0 U | 5.0 U | 5.0 U |
| Styrene | ug/L | | 0.50 U | 0.50 U | 0.50 U |

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| Analysis/ Analyte | Units | 13-__ | 101-__ | 102-__ | 102-FD |
|--------------------------------|-------|-------|--------|--------|--------|
| 1,1,2,2-Tetrachloroethane | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| Tetrachloroethene | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| Toluene | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| 1,2,3-Trichlorobenzene | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| 1,2,4-Trichlorobenzene | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| 1,1,1-Trichloroethane | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| 1,1,2-Trichloroethane | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| Trichloroethene | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| Trichlorofluoromethane | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| 1,1,2-Trichlorotrifluoroethane | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| Vinyl Chloride | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| m and/or p-Xylene | ug/L | | 0.50 U | 0.50 U | 0.50 U |
| o-Xylene | ug/L | | 0.50 U | 0.50 U | 0.50 U |

| Analysis/ Analyte | Units | 104-__ | 105-__ | 106-__ | 107-__ |
|---|-------|--------|--------|---------|--------|
| 1 VOCs in Water by GC/MS for Low Detection Limits | | | | | |
| Acetone | ug/L | 17 | 14 | 15 | 16 |
| Benzene | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| Bromochloromethane | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| Bromodichloromethane | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| Bromoform | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| Bromomethane | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| 2-Butanone | ug/L | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Carbon Disulfide | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| Carbon Tetrachloride | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| Chlorobenzene | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| Chloroethane | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| Chloroform | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| Chloromethane | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| Cyclohexane | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| 1,2-Dibromo-3-Chloropropane | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| Dibromochloromethane | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| 1,2-Dibromoethane | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| 1,2-Dichlorobenzene | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| 1,3-Dichlorobenzene | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| 1,4-Dichlorobenzene | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| Dichlorodifluoromethane | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| 1,1-Dichloroethane | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| 1,2-Dichloroethane | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| 1,1-Dichloroethene | ug/L | 0.50 U | 0.50 U | 0.50 UJ | 0.50 U |
| cis-1,2-Dichloroethene | ug/L | 0.50 U | 0.50 U | 0.50 UJ | 0.50 U |
| trans-1,2-Dichloroethene | ug/L | 0.50 U | 0.50 U | 0.50 UJ | 0.50 U |
| 1,2-Dichloropropane | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| cis-1,3-Dichloropropene | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| trans-1,3-Dichloropropene | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| Ethyl Benzene | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| 2-Hexanone | ug/L | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Isopropylbenzene | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| Methyl Acetate | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| Methyl tert-butyl ether | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| Methylcyclohexane | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| Methylene Chloride | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| 4-Methyl-2-Pentanone | ug/L | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Styrene | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| 1,1,2,2-Tetrachloroethane | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| Tetrachloroethene | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| Toluene | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| 1,2,3-Trichlorobenzene | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| 1,2,4-Trichlorobenzene | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| 1,1,1-Trichloroethane | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| 1,1,2-Trichloroethane | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |

ASR Number: 8595

Project ID: YSB7J7

RLAB Approved Sample Analysis Results

Project Desc: TCE-Clinton Engines

08/20/2020

| Analysis/ Analyte | Units | 104-__ | 105-__ | 106-__ | 107-__ |
|--------------------------------|-------|--------|--------|--------|--------|
| Trichloroethene | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| Trichlorofluoromethane | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| 1,1,2-Trichlorotrifluoroethane | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| Vinyl Chloride | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| m and/or p-Xylene | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| o-Xylene | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U |

| Analysis/ Analyte | Units | 108-__ | 109-__ | 110-FB |
|---|-------|--------|--------|--------|
| 1 VOCs in Water by GC/MS for Low Detection Limits | | | | |
| Acetone | ug/L | 14 | 16 | 18 |
| Benzene | ug/L | 0.50 U | 0.50 U | 0.50 U |
| Bromochloromethane | ug/L | 0.50 U | 0.50 U | 0.50 U |
| Bromodichloromethane | ug/L | 0.50 U | 0.50 U | 0.50 U |
| Bromoform | ug/L | 0.50 U | 0.50 U | 0.50 U |
| Bromomethane | ug/L | 0.50 U | 0.50 U | 0.50 U |
| 2-Butanone | ug/L | 5.0 U | 5.0 U | 5.0 U |
| Carbon Disulfide | ug/L | 0.50 U | 0.50 U | 0.50 U |
| Carbon Tetrachloride | ug/L | 0.50 U | 0.50 U | 0.50 U |
| Chlorobenzene | ug/L | 0.50 U | 0.50 U | 0.50 U |
| Chloroethane | ug/L | 0.50 U | 0.50 U | 0.50 U |
| Chloroform | ug/L | 0.50 U | 0.50 U | 0.50 U |
| Chloromethane | ug/L | 0.50 U | 0.50 U | 0.50 U |
| Cyclohexane | ug/L | 0.50 U | 0.50 U | 0.50 U |
| 1,2-Dibromo-3-Chloropropane | ug/L | 0.50 U | 0.50 U | 0.50 U |
| Dibromochloromethane | ug/L | 0.50 U | 0.50 U | 0.50 U |
| 1,2-Dibromoethane | ug/L | 0.50 U | 0.50 U | 0.50 U |
| 1,2-Dichlorobenzene | ug/L | 0.50 U | 0.50 U | 0.50 U |
| 1,3-Dichlorobenzene | ug/L | 0.50 U | 0.50 U | 0.50 U |
| 1,4-Dichlorobenzene | ug/L | 0.50 U | 0.50 U | 0.50 U |
| Dichlorodifluoromethane | ug/L | 0.50 U | 0.50 U | 0.50 U |
| 1,1-Dichloroethane | ug/L | 0.50 U | 0.50 U | 0.50 U |
| 1,2-Dichloroethane | ug/L | 0.50 U | 0.50 U | 0.50 U |
| 1,1-Dichloroethene | ug/L | 0.50 U | 0.50 U | 0.50 U |
| cis-1,2-Dichloroethene | ug/L | 0.50 U | 0.50 U | 0.50 U |
| trans-1,2-Dichloroethene | ug/L | 0.50 U | 0.50 U | 0.50 U |
| 1,2-Dichloropropane | ug/L | 0.50 U | 0.50 U | 0.50 U |
| cis-1,3-Dichloropropene | ug/L | 0.50 U | 0.50 U | 0.50 U |
| trans-1,3-Dichloropropene | ug/L | 0.50 U | 0.50 U | 0.50 U |
| Ethyl Benzene | ug/L | 0.50 U | 0.50 U | 0.50 U |
| 2-Hexanone | ug/L | 5.0 U | 5.0 U | 5.0 U |
| Isopropylbenzene | ug/L | 0.50 U | 0.50 U | 0.50 U |
| Methyl Acetate | ug/L | 0.50 U | 0.50 U | 0.50 U |
| Methyl tert-butyl ether | ug/L | 0.50 U | 0.50 U | 0.50 U |
| Methylcyclohexane | ug/L | 0.50 U | 0.50 U | 0.50 U |
| Methylene Chloride | ug/L | 0.50 U | 0.50 U | 0.50 U |
| 4-Methyl-2-Pentanone | ug/L | 5.0 U | 5.0 U | 5.0 U |
| Styrene | ug/L | 0.50 U | 0.50 U | 0.50 U |
| 1,1,2,2-Tetrachloroethane | ug/L | 0.50 U | 0.50 U | 0.50 U |
| Tetrachloroethene | ug/L | 0.50 U | 0.50 U | 0.50 U |
| Toluene | ug/L | 0.50 U | 0.50 U | 0.50 U |
| 1,2,3-Trichlorobenzene | ug/L | 0.50 U | 0.50 U | 0.50 U |
| 1,2,4-Trichlorobenzene | ug/L | 0.50 U | 0.50 U | 0.50 U |
| 1,1,1-Trichloroethane | ug/L | 0.50 U | 0.50 U | 0.50 U |
| 1,1,2-Trichloroethane | ug/L | 0.50 U | 0.50 U | 0.50 U |

ASR Number: 8595

Project ID: YSB7J7

RLAB Approved Sample Analysis Results

Project Desc: TCE-Clinton Engines

08/20/2020

| Analysis/ Analyte | Units | 108-__ | 109-__ | 110-FB |
|--------------------------------|--------------|---------------|---------------|---------------|
| Trichloroethene | ug/L | 0.50 U | 0.50 U | 0.50 U |
| Trichlorofluoromethane | ug/L | 0.50 U | 0.50 U | 0.50 U |
| 1,1,2-Trichlorotrifluoroethane | ug/L | 0.50 U | 0.50 U | 0.50 U |
| Vinyl Chloride | ug/L | 0.50 U | 0.50 U | 0.50 U |
| m and/or p-Xylene | ug/L | 0.50 U | 0.50 U | 0.50 U |
| o-Xylene | ug/L | 0.50 U | 0.50 U | 0.50 U |

ENVIRONMENTAL PROTECTION AGENCY REGION VII

EPA PROJECT MANAGER (Print)

Yvonne Smith

TCE Clinton Engines

| DATE OF SAM | | COL | CT (YR) | SHEET | |
|-------------|-------|-----|---------|-------|---|
| MONTH | DAY | DAY | YEAR | 1 | 1 |
| 07 | 21-22 | | 2020 | | |

| SAMPLE NUMBER | TYPE OF CONTAINERS | | | | VOA set = 3 vials & tube BOTTLE (3 VIALS EA) | SAMPLED MEDIA | | | | RECEIVING LABORATORY |
|------------------|---|--------|--------|--------|---|-----------------------------|----|-----------|-----|--------------------------------|
| | BOTTLE | BOTTLE | BOTTLE | BOTTLE | | W | SD | H2O WASTE | AIR | |
| | NUMBER(S) OF CONTAINERS PER SAMPLE NUMBER | | | | | other sample numbers, etc.) | | | | |
| 8595-1 | | | | 1 | | ✓ | | | | |
| 8595-2 | | | | 1 | | ✓ | | | | |
| 8595-3 | | | | 1 | | ✓ | | | | |
| 8595-4 | | | | 1 | | ✓ | | | | |
| 8595-5 | | | | 1 | | ✓ | | | | |
| 8595-5-FD | | | | 1 | | ✓ | | | | |
| 8595-7 | | | | 1 | | ✓ | | | | |
| 8595-8 | | | | 3 | | ✓ | | | | MS/MSD |
| 8595-9 | | | | 1 | | ✓ | | | | |
| 8595-10 | | | | 1 | | ✓ | | | | |
| 8595-11 | | | | 1 | | ✓ | | | | |
| 8595-12 | | | | 1 | | ✓ | | | | |
| 8595-13 | | | | 1 | | ✓ | | | | |
| 8595-101 | | | | | 3 | ✓ | | | | MS/MSD |
| 8595-102 | | | | | 1 | ✓ | | | | |
| 8595-102-FD | | | | | 1 | ✓ | | | | |
| 8595-104 | | | | | 1 | ✓ | | | | |
| 8595-105 | | | | | 1 | ✓ | | | | |
| 8595-106 | | | | | 1 | ✓ | | | | |
| 8595-107 | | | | | 1 | ✓ | | | | Cooler temp. delivered between |
| 8595-108 | | | | | 1 | ✓ | | | | 0-1degC. nr7/23/2020 |
| 8595-109 | | | | | 1 | ✓ | | | | |
| 8595-110-FB | | | | | 1 | ✓ | | | | |
| | | | | | | | | | | ASR Complete |

27

1

bethany.gatz@tetrattech.com

Digitally signed by bethany.gatz@tetrattech.com
DN: cn=bethany.gatz@tetrattech.com
Date: 2020.07.23 09:57:49-0500

NICOLE ROBLEZ

Digitally signed by NICOLE ROBLEZ
Date: 2020.07.23 15:49:21-0500

STC analyses

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Page 18 of 18

**United States Environmental Protection Agency
Region 7
300 Minnesota Avenue
Kansas City, KS 66101**

Date: 08/19/2020

Subject: Transmittal of Sample Analysis Results for ASR #: 8612

Project ID: YSB7J7

Project Description: TCE-Clinton Engines

From: Margaret E.W. St. Germain, Chief
Laboratory Technology & Analysis Branch
Laboratory Services and Applied Sciences Division

To: Yvonne Smith
SEMD/AERR/RREP

Enclosed are the analytical data for the above-referenced Analytical Services Request (ASR) and Project. These results are based on samples as received at the Science and Technology Center. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please ensure that you file this electronic (.pdf only) transmittal in your records management system. The Regional Laboratory will now retain all of the original hardcopy documentation (e.g. COC[s] and the R7LIMS field sheet[s], etc.) according to our LSASD records management system.

Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. Please complete the Online ASR Sample/Data Disposition and Customer Survey for this ASR as soon as possible. The process of disposing of the samples for this ASR will be initiated 30 days from the date of this transmittal unless an alternate release date is specified on the Online ASR Sample/Data Disposition and Customer Survey. It is critical that we receive your response in accordance to RCRA and the laboratory accreditation.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295.

Project Manager: Yvonne Smith**Org:** SEMD/AERR/R
REP**Phone:** 913-551-7795**Project ID:** YSB7J7

2020109

Project Desc: TCE-Clinton Engines**QAPP Number:****Location:** Maquoketa**State:** Iowa**Program:** Superfund**Site Name:** TCE-CLINTON ENGINES - Site Evaluation/Disposition**Site ID:** B7J7 **Site OU:** 00**Purpose:** Site Cleanup Support**GPRA PRC:** 000DC6

Vapor Intrusion sampling.

PM (YS) noted on the submitted ASR on 6/16/2020 that this site is not part of a litigation hold at this time.

GPRA/site code check (+OU) ok per DB on 6/16/2020.

Explanation of Codes, Units and Qualifiers used on this report**Sample QC Codes:** QC Codes identify the type of sample for quality control purpose.**Units:** Specific units in which results are reported.

___ = Field Sample

I.D. = Identification, Species or Other ID

inHg = Inch of Mercury

ug/m3 = Micrograms per Cubic Meter

Data Qualifiers: Specific codes used in conjunction with data values to provide additional information on the quality of reported results, or used to explain the absence of a specific value.

(Blank) = Values have been reviewed and found acceptable for use.

UJ = The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

U = The analyte was not detected at or above the reporting limit.

J = The identification of the analyte is acceptable; the reported value is an estimate.

ASR Number: 8612

Sample Information Summary

08/19/2020

Project ID: YSB7J7

Project Desc: TCE-Clinton Engines

| Sample No | QC Code | Matrix | Location Description | External Sample No | Start Date | Start Time | End Date | End Time | Receipt Date |
|-----------|---------|--------|--|--------------------|------------|------------|------------|----------|--------------|
| 1 - | --- | Air | █ E Maple - living room | | 07/20/2020 | 09:49 | 07/21/2020 | 08:56 | 07/23/2020 |
| 2 - | --- | Air | █ N Dearborn - living room | | 07/20/2020 | 10:35 | 07/21/2020 | 09:12 | 07/23/2020 |
| 3 - | --- | Air | █ E Platt - auditorium | | 07/20/2020 | 11:10 | 07/21/2020 | 10:20 | 07/23/2020 |
| 4 - | --- | Air | █ E Maple - left building shop (west) | | 07/20/2020 | 11:53 | 07/21/2020 | 10:44 | 07/23/2020 |
| 5 - | --- | Air | █ E Maple - right building office (east) | | 07/20/2020 | 11:55 | 07/21/2020 | 10:58 | 07/23/2020 |
| 6 - | --- | Air | █ E Maple - room w/ furnace closet | | 07/20/2020 | 12:38 | 07/21/2020 | 12:03 | 07/23/2020 |
| 7 - | --- | Air | █ E Maple - main room | | 07/20/2020 | 12:55 | 07/21/2020 | 12:22 | 07/23/2020 |
| 8 - | --- | Air | █ S Matteson - living room | | 07/20/2020 | 13:30 | 07/21/2020 | 12:54 | 07/23/2020 |
| 9 - | --- | Air | █ S Matteson - office room | | 07/20/2020 | 13:57 | 07/21/2020 | 13:10 | 07/23/2020 |
| 10 - | --- | Air | █ E Maple - living room | | 07/20/2020 | 15:28 | 07/21/2020 | 14:40 | 07/23/2020 |
| 11 - | --- | Air | █ S Clark - kitchen/dining table | | 07/20/2020 | 16:02 | 07/21/2020 | 15:34 | 07/23/2020 |
| 12 - | --- | Air | █ E Platt - front desk | | 07/20/2020 | 16:25 | 07/21/2020 | 15:58 | 07/23/2020 |
| 13 - | --- | Air | █ E Platt - living room | | 07/20/2020 | 17:22 | 07/21/2020 | 16:45 | 07/23/2020 |
| 14 - | --- | Air | █ S Matteson - living room | | 07/20/2020 | 17:55 | 07/21/2020 | 17:08 | 07/23/2020 |
| 15 - | --- | Air | █ E Platt - living room | | 07/20/2020 | 18:30 | 07/21/2020 | 17:38 | 07/23/2020 |
| 16 - | --- | Air | █ N Dearborn - basement port | | 07/21/2020 | 09:15 | | | 07/23/2020 |
| 17 - | --- | Air | █ E Platt - basement port | | 07/21/2020 | 10:24 | | | 07/23/2020 |
| 18 - | --- | Air | █ E Maple - west shop port | | 07/21/2020 | 10:46 | | | 07/23/2020 |
| 19 - | --- | Air | █ E Maple - furnace closet port | | 07/21/2020 | 12:08 | | | 07/23/2020 |
| 20 - | --- | Air | █ S Matteson - basement port | | 07/21/2020 | 12:56 | | | 07/23/2020 |
| 21 - | --- | Air | █ S Matteson - basement port | | 07/21/2020 | 13:13 | | | 07/23/2020 |
| 22 - | --- | Air | █ E Maple - basement port | | 07/21/2020 | 14:44 | | | 07/23/2020 |
| 23 - | --- | Air | █ E Maple - main office area | | 07/21/2020 | 15:22 | 07/22/2019 | 14:09 | 07/23/2020 |
| 24 - | --- | Air | █ S Clark - basement port | | 07/21/2020 | 15:37 | | | 07/23/2020 |
| 25 - | --- | Air | █ E Platt - basement port | | 07/21/2020 | 16:48 | | | 07/23/2020 |
| 26 - | --- | Air | █ S Matteson - basement port (back room) | | 07/21/2020 | 17:12 | | | 07/23/2020 |
| 27 - | --- | Air | █ E Platt - basement port | | 07/21/2020 | 17:41 | | | 07/23/2020 |
| 28 - | --- | Air | █ E Maple - shop port | | 07/22/2020 | 14:12 | | | 07/23/2020 |

Analysis Comments About Results For This Analysis

1 Air VOA Field Parameters**Lab:** (Field Measurement)**Method:** Measurement of field parameter

Samples: 1-__ 2-__ 3-__ 4-__ 5-__ 6-__ 7-__
8-__ 9-__ 10-__ 11-__ 12-__ 13-__ 14-__
15-__ 16-__ 17-__ 18-__ 19-__ 20-__ 21-__
22-__ 23-__ 24-__ 25-__ 26-__ 27-__ 28-__

Comments:

(N/A)

1 VOCs in Air Samples in Canisters at Ambient Levels by GC/MS**Lab:** Region 7 EPA Laboratory - Kansas City, Ks.**Method:** EPA Region 7 RLAB Method 3230.4I

Samples: 1-__ 2-__ 3-__ 4-__ 5-__ 6-__ 7-__
8-__ 9-__ 10-__ 11-__ 12-__ 13-__ 14-__
15-__ 16-__ 17-__ 18-__ 19-__ 20-__ 21-__
22-__ 23-__ 24-__ 25-__ 26-__ 27-__ 28-__

Comments:

Toluene was reported above the calibration range in sample 4. The value (1700ug/m3) was just above the calibration range, with a top of curve of 1500 ug/m3. Value was J-coded to indicate that it was an estimate, but should be usable for it's intended purpose. Sample had already been diluted, and there was not sufficient sample volume to prepare an additional dilution.

Sample 16 may have been compromised due to grit/sand in the canister valve acquired during sample collection. There was sufficient volume to analyze, but the canister did not maintain pressure when leak-checked. Data for this sample were reported without coding and should be usable for it's intended purpose. These notes are presented for informational purposes only.

Vinyl Chloride was UJ-coded in samples 15-28. This analyte was not found in the samples at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to the continuing calibration check not meeting accuracy specifications (-32.1% deviation, Limit -30%). The actual reporting limit for this analyte may be higher than the reported value.

ASR Number: 8612

RLAB Approved Sample Analysis Results

08/19/2020

Project ID: YSB7J7

Project Desc: TCE-Clinton Engines

| Analysis/ Analyte | Units | 1-__ | 2-__ | 3-__ | 4-__ |
|---|-------|--------|--------|--------|--------|
| 1 Air VOA Field Parameters | | | | | |
| Canister ID | I.D. | L5200 | 14974 | R0492 | 833 |
| Regulator ID | I.D. | 34 | 57 | 60 | 35 |
| Starting Pressure | inHg | -29.5 | -30 | -29 | -30 |
| Ending Pressure | inHg | -6 | -7 | -4 | -2.5 |
| 1 VOCs in Air Samples in Canisters at Ambient Levels by GC/MS | | | | | |
| cis-1,2-Dichloroethene | ug/m3 | 0.20 U | 0.20 U | 0.20 U | 0.28 |
| trans-1,2-Dichloroethene | ug/m3 | 0.51 | 0.20 U | 0.20 U | 0.79 |
| Toluene | ug/m3 | 680 | 1.7 | 13 | 1700 J |
| Trichloroethene | ug/m3 | 0.20 | 0.21 | 0.14 U | 0.35 |
| Vinyl Chloride | ug/m3 | 0.13 U | 0.24 | 0.13 U | 0.13 U |

ASR Number: 8612

RLAB Approved Sample Analysis Results

08/19/2020

Project ID: YSB7J7

Project Desc: TCE-Clinton Engines

| Analysis/ Analyte | Units | 5-__ | 6-__ | 7-__ | 8-__ |
|---|-------|--------|--------|--------|--------|
| 1 Air VOA Field Parameters | | | | | |
| Canister ID | I.D. | 14977 | 811 | R0496 | 642 |
| Regulator ID | I.D. | 81 | 69 | 55 | 54 |
| Starting Pressure | inHg | -30 | -29.5 | -30 | -30 |
| Ending Pressure | inHg | -4 | -4 | -7 | -3.5 |
| 1 VOCs in Air Samples in Canisters at Ambient Levels by GC/MS | | | | | |
| cis-1,2-Dichloroethene | ug/m3 | 0.20 U | 0.33 | 0.20 U | 0.20 U |
| trans-1,2-Dichloroethene | ug/m3 | 0.20 U | 0.20 U | 0.20 U | 0.20 U |
| Toluene | ug/m3 | 300 | 14 | 11 | 14 |
| Trichloroethene | ug/m3 | 0.14 U | 0.64 | 0.14 U | 0.14 U |
| Vinyl Chloride | ug/m3 | 0.13 U | 0.13 U | 0.13 U | 0.13 U |

ASR Number: 8612

RLAB Approved Sample Analysis Results

08/19/2020

Project ID: YSB7J7

Project Desc: TCE-Clinton Engines

| Analysis/ Analyte | Units | 9-__ | 10-__ | 11-__ | 12-__ |
|---|-------|--------|--------|--------|--------|
| 1 Air VOA Field Parameters | | | | | |
| Canister ID | I.D. | 823 | 646 | L5187 | 639 |
| Regulator ID | I.D. | 91 | 97 | 101 | 102 |
| Starting Pressure | inHg | -29 | -28.5 | -29.5 | -29 |
| Ending Pressure | inHg | -1.5 | -2 | -5 | -3 |
| 1 VOCs in Air Samples in Canisters at Ambient Levels by GC/MS | | | | | |
| cis-1,2-Dichloroethene | ug/m3 | 0.20 U | 0.20 U | 0.20 U | 0.20 U |
| trans-1,2-Dichloroethene | ug/m3 | 0.20 U | 0.20 U | 0.20 U | 0.20 U |
| Toluene | ug/m3 | 10 | 3.8 | 2.9 | 6.6 |
| Trichloroethene | ug/m3 | 0.14 U | 0.14 U | 0.14 U | 0.14 U |
| Vinyl Chloride | ug/m3 | 0.13 U | 0.13 U | 0.13 U | 0.13 U |

ASR Number: 8612

RLAB Approved Sample Analysis Results

08/19/2020

Project ID: YSB7J7

Project Desc: TCE-Clinton Engines

| Analysis/ Analyte | Units | 13-__ | 14-__ | 15-__ | 16-__ |
|---|-------|--------|--------|---------|---------|
| 1 Air VOA Field Parameters | | | | | |
| Canister ID | I.D. | 640 | 836 | L5186 | 721 |
| Regulator ID | I.D. | 63 | 62 | 52 | NA |
| Starting Pressure | inHg | -29 | -30 | -29 | -30 |
| Ending Pressure | inHg | -3 | -3 | -3.5 | -1 |
| 1 VOCs in Air Samples in Canisters at Ambient Levels by GC/MS | | | | | |
| cis-1,2-Dichloroethene | ug/m3 | 0.20 U | 0.20 U | 0.20 U | 0.20 U |
| trans-1,2-Dichloroethene | ug/m3 | 0.20 U | 0.20 U | 0.20 U | 0.20 U |
| Toluene | ug/m3 | 2.2 | 3.3 | 0.76 U | 0.76 U |
| Trichloroethene | ug/m3 | 0.14 U | 0.14 U | 0.14 U | 0.14 U |
| Vinyl Chloride | ug/m3 | 0.13 U | 0.13 U | 0.13 UJ | 0.13 UJ |

ASR Number: 8612

RLAB Approved Sample Analysis Results

08/19/2020

Project ID: YSB7J7

Project Desc: TCE-Clinton Engines

| Analysis/ Analyte | Units | 17-__ | 18-__ | 19-__ | 20-__ |
|---|-------|---------|---------|---------|---------|
| 1 Air VOA Field Parameters | | | | | |
| Canister ID | I.D. | R0489 | 713 | 725 | 814 |
| Regulator ID | I.D. | NA | NA | NA | NA |
| Starting Pressure | inHg | -30 | -30 | -30 | -30 |
| Ending Pressure | inHg | -4 | -4 | -2 | -8 |
| 1 VOCs in Air Samples in Canisters at Ambient Levels by GC/MS | | | | | |
| cis-1,2-Dichloroethene | ug/m3 | 0.20 U | 0.20 U | 0.20 U | 0.20 U |
| trans-1,2-Dichloroethene | ug/m3 | 0.20 U | 0.20 U | 0.20 U | 0.20 U |
| Toluene | ug/m3 | 2.9 | 7.0 | 0.94 | 0.76 U |
| Trichloroethene | ug/m3 | 0.14 U | 0.14 U | 0.32 | 0.14 U |
| Vinyl Chloride | ug/m3 | 0.13 UJ | 0.13 UJ | 0.13 UJ | 0.13 UJ |

ASR Number: 8612

RLAB Approved Sample Analysis Results

08/19/2020

Project ID: YSB7J7

Project Desc: TCE-Clinton Engines

| Analysis/ Analyte | Units | 21-__ | 22-__ | 23-__ | 24-__ |
|---|-------|---------|---------|---------|---------|
| 1 Air VOA Field Parameters | | | | | |
| Canister ID | I.D. | R2221 | L5184 | L5193 | 611 |
| Regulator ID | I.D. | NA | NA | 56 | NA |
| Starting Pressure | inHg | -30 | -30 | -30 | -30 |
| Ending Pressure | inHg | -2 | -2 | -2 | -0.5 |
| 1 VOCs in Air Samples in Canisters at Ambient Levels by GC/MS | | | | | |
| cis-1,2-Dichloroethene | ug/m3 | 0.20 U | 0.20 U | 0.20 U | 0.20 U |
| trans-1,2-Dichloroethene | ug/m3 | 0.20 U | 0.20 U | 0.20 U | 0.20 U |
| Toluene | ug/m3 | 0.76 U | 0.76 U | 34 | 0.76 U |
| Trichloroethene | ug/m3 | 0.14 U | 0.14 U | 0.14 U | 0.14 U |
| Vinyl Chloride | ug/m3 | 0.13 UJ | 0.13 UJ | 0.13 UJ | 0.13 UJ |

ASR Number: 8612

RLAB Approved Sample Analysis Results

08/19/2020

Project ID: YSB7J7

Project Desc: TCE-Clinton Engines

| Analysis/ Analyte | Units | 25-__ | 26-__ | 27-__ | 28-__ |
|---|-------|---------|---------|---------|---------|
| 1 Air VOA Field Parameters | | | | | |
| Canister ID | I.D. | 631 | 728 | 649 | R0494 |
| Regulator ID | I.D. | NA | NA | NA | NA |
| Starting Pressure | inHg | -30 | -30 | -30 | -30 |
| Ending Pressure | inHg | -2 | -2 | -2 | -4 |
| 1 VOCs in Air Samples in Canisters at Ambient Levels by GC/MS | | | | | |
| cis-1,2-Dichloroethene | ug/m3 | 0.20 U | 0.20 U | 0.20 U | 0.20 U |
| trans-1,2-Dichloroethene | ug/m3 | 0.20 U | 0.20 U | 0.20 U | 0.20 U |
| Toluene | ug/m3 | 0.76 U | 0.76 U | 0.76 U | 0.76 U |
| Trichloroethene | ug/m3 | 0.76 | 0.14 U | 0.14 U | 0.14 U |
| Vinyl Chloride | ug/m3 | 0.13 UJ | 0.13 UJ | 0.13 UJ | 0.13 UJ |

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

E Yvonne Smith SITE OR SAMPLING EVENT TCE Clinton Engines 07 MONTH 20-22 DAY 2020 YEAR SHEET 1 of 2

CONTENTS OF SHIPMENT

| | TYPE OF CONTAINERS | | | | SAMPLE MEDIA | | | | OTHER |
|---------|---|------------------|--------|---------------------|--------------|----|-----------|-----|-----------------------------|
| | BOTTLE | 6-Liter CANISTER | BOTTLE | BOTTLE (3 VIALS EA) | WASTE | SP | HCL WASTE | AIR | |
| | NUMBER(S) OF CONTAINERS PER SAMPLE NUMBER | | | | | | | | other sample numbers, etc.) |
| 8612-1 | | 1 | | | | | | ✓ | |
| 8612-2 | | 1 | | | | | | ✓ | |
| 8612-3 | | 1 | | | | | | ✓ | |
| 8612-4 | | 1 | | | | | | ✓ | |
| 8612-5 | | 1 | | | | | | ✓ | |
| 8612-6 | | 1 | | | | | | ✓ | |
| 8612-7 | | 1 | | | | | | ✓ | |
| 8612-8 | | 1 | | | | | | ✓ | |
| 8612-9 | | 1 | | | | | | ✓ | |
| 8612-10 | | 1 | | | | | | ✓ | |
| 8612-11 | | 1 | | | | | | ✓ | |
| 8612-12 | | 1 | | | | | | ✓ | |
| 8612-13 | | 1 | | | | | | ✓ | |
| 8612-14 | | 1 | | | | | | ✓ | |
| 8612-15 | | 1 | | | | | | ✓ | |
| 8612-16 | | 1 | | | | | | ✓ | |
| 8612-17 | | 1 | | | | | | ✓ | |
| 8612-18 | | 1 | | | | | | ✓ | |
| 8612-19 | | 1 | | | | | | ✓ | |
| 8612-20 | | 1 | | | | | | ✓ | |
| 8612-21 | | 1 | | | | | | ✓ | |
| 8612-22 | | 1 | | | | | | ✓ | |
| 8612-23 | | 1 | | | | | | ✓ | |
| 8612-24 | | 1 | | | | | | ✓ | |

28 C (F 6

ICE CHEST(S): OTHER

MM C

SAMPLER CONVEYED

(SHIPPING AIRBILL NUMBER)

RE bethany.gatz@tetrattech.com Digitally signed by bethany.gatz@tetrattech.com Date: 2020.07.23 10:25:20 -0500

NICOLE ROBLEZ Digitally signed by NICOLE ROBLEZ Date: 2020.07.23 15:50:37 -0500

STC Analyses

RELINQUISHED BY (PM/SAMPLER)

RE ED

REASON FOR CHANGE OF C DY

RELINQUISHED BY (PM/S MP ER)

RECEIVED BY

REASON FOR CHANGE OF CUSTODY

R

RE

REASON FOR CHANGE OF CUSTODY

**United States Environmental Protection Agency
Region 7
300 Minnesota Avenue
Kansas City, KS 66101**

Date: 03/17/2021

Subject: Transmittal of Sample Analysis Results for ASR #: 8778

Project ID: YSB7J7

Project Description: TCE-Clinton Engines

From: Margaret E.W. St. Germain, Chief
Laboratory Technology & Analysis Branch
Laboratory Services and Applied Sciences Division

To: Yvonne Smith
SEMD/AERR/RREP

Enclosed are the analytical data for the above-referenced Analytical Services Request (ASR) and Project. These results are based on samples as received at the Science and Technology Center. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please ensure that you file this electronic (.pdf only) transmittal in your records management system. The Regional Laboratory will now retain all of the original hardcopy documentation (e.g. COC[s] and the R7LIMS field sheet[s], etc.) according to our LSASD records management system.

Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. Please complete the Online ASR Sample/Data Disposition and Customer Survey for this ASR as soon as possible. The process of disposing of the samples for this ASR will be initiated 30 days from the date of this transmittal unless an alternate release date is specified on the Online ASR Sample/Data Disposition and Customer Survey. It is critical that we receive your response in accordance to RCRA and the laboratory accreditation.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295.

Project Manager: Yvonne Smith**Org:** SEMD/AERR/R
REP**Phone:** 913-551-7795
2020109**Project ID:** YSB7J7**QAPP Number:****Project Desc:** TCE-Clinton Engines**Location:** Maquoketa**State:** Iowa**Program:** Superfund**Site Name:** TCE-CLINTON ENGINES - Site Evaluation/Disposition**Site ID:** B7J7 **Site OU:** 00**Purpose:** Site Cleanup Support**GPRA PRC:** 000DC6

Vapor Intrusion sampling.

PM (YS) noted on the submitted ASR on 1/7/2021 that this site is not part of a litigation hold at this time.

GPRA/site code check (+OU) ok per JE on 1/7/2021.

Explanation of Codes, Units and Qualifiers used on this report**Sample QC Codes:** QC Codes identify the type of sample for quality control purpose.**Units:** Specific units in which results are reported.

___ = Field Sample

ug/m3 = Micrograms per Cubic Meter

inHg = Inch of Mercury

I.D. = Identification, Species or Other ID

Data Qualifiers: Specific codes used in conjunction with data values to provide additional information on the quality of reported results, or used to explain the absence of a specific value.

(Blank)= Values have been reviewed and found acceptable for use.

U = The analyte was not detected at or above the reporting limit.

ASR Number: 8778**Sample Information Summary****03/17/2021****Project ID: YSB7J7****Project Desc: TCE-Clinton Engines**

| Sample No | QC Code | Matrix | Location Description | External Sample No | Start Date | Start Time | End Date | End Time | Receipt Date |
|-----------|---------|--------|-------------------------------|--------------------|------------|------------|------------|----------|--------------|
| 1 - | | Air | 24-Hr Indoor Air - E Platt | | 02/22/2021 | 17:29 | 02/23/2021 | 16:10 | 02/25/2021 |
| 2 - | | Air | 24-Hr Indoor Air - E Maple | | 02/23/2021 | 09:49 | 02/24/2021 | 08:45 | 02/25/2021 |
| 3 - | | Air | Sub-Slab Grab - E Maple | | 02/23/2021 | 09:56 | | | 02/25/2021 |
| 4 - | | Air | 24-Hr Indoor Air - E Maple | | 02/23/2021 | 10:17 | 02/24/2021 | 08:50 | 02/25/2021 |
| 5 - | | Air | Sub-Slab Grab - E Maple | | 02/23/2021 | 10:21 | | | 02/25/2021 |
| 6 - | | Air | 24-Hr Indoor Air - N Dearborn | | 02/23/2021 | 13:01 | 02/24/2021 | 11:42 | 02/25/2021 |
| 7 - | | Air | 24-Hr Indoor Air - E Platt | | 02/23/2021 | 13:43 | 02/24/2021 | 12:14 | 02/25/2021 |
| 8 - | | Air | Sub-Slab Grab - E Platt | | 02/23/2021 | 13:46 | | | 02/25/2021 |
| 9 - | | Air | 24-Hr Indoor Air - E Maple | | 02/23/2021 | 16:44 | 02/24/2021 | 15:28 | 02/25/2021 |
| 10 - | | Air | 24-Hr Indoor Air - S Matteson | | 02/23/2021 | 17:34 | 02/24/2021 | 16:20 | 02/25/2021 |
| 11 - | | Air | Sub-Slab Grab - S Matteson | | 02/23/2021 | 17:40 | | | 02/25/2021 |
| 12 - | | Air | Ambient Air - E Maple | | 02/23/2021 | 18:10 | 02/24/2021 | 16:55 | 02/25/2021 |

Analysis Comments About Results For This Analysis

1 Air VOA Field Parameters

Lab: (Field Measurement)**Method:** Measurement of field parameter**Samples:** 1-__ 2-__ 3-__ 4-__ 5-__ 6-__ 7-__
 8-__ 9-__ 10-__ 11-__ 12-__**Comments:**

(N/A)

1 VOCs in Air Samples in Canisters at Ambient Levels by GC/MS

Lab: Region 7 EPA Laboratory - Kansas City, Ks.**Method:** EPA Region 7 RLAB Method 3230.4I**Samples:** 1-__ 2-__ 3-__ 4-__ 5-__ 6-__ 7-__
 8-__ 9-__ 10-__ 11-__ 12-__**Comments:**

Though not requested, Tetrachloroethene was noted in samples 4 at 13.5 ug/m3, 5 at 12.5ug/m3 and 8 at 10.1 ug/m3.

ASR Number: 8778**RLAB Approved Sample Analysis Results****03/17/2021****Project ID:** YSB7J7**Project Desc:** TCE-Clinton Engines

| Analysis/ Analyte | Units | 1-__ | 2-__ | 3-__ | 4-__ |
|--|--------------|-------------|-------------|-------------|-------------|
| 1 Air VOA Field Parameters | | | | | |
| Canister ID | I.D. | 692 | 808 | 694 | 340 |
| Regulator ID | I.D. | 4 | 8 | NA | 10 |
| Starting Pressure | inHg | -29 | -30 | -30 | -28.5 |
| Ending Pressure | inHg | -6 | -4.5 | -1 | 0 |
| 1 VOCs in Air Samples in Canisters at Ambient Levels by GC/MS | | | | | |
| cis-1,2-Dichloroethene | ug/m3 | 0.20 U | 0.20 U | 0.20 U | 0.20 U |
| trans-1,2-Dichloroethene | ug/m3 | 0.20 U | 0.46 | 0.20 U | 0.20 U |
| Toluene | ug/m3 | 2.9 | 460 | 16 | 5.5 |
| Trichloroethene | ug/m3 | 0.14 U | 0.14 U | 0.14 U | 0.14 U |
| Vinyl Chloride | ug/m3 | 0.13 U | 0.13 U | 0.13 U | 0.13 U |

ASR Number: 8778**RLAB Approved Sample Analysis Results****03/17/2021****Project ID:** YSB7J7**Project Desc:** TCE-Clinton Engines

| Analysis/ Analyte | Units | 5-__ | 6-__ | 7-__ | 8-__ |
|--|--------------|-------------|-------------|-------------|-------------|
| 1 Air VOA Field Parameters | | | | | |
| Canister ID | I.D. | 736 | 689 | 726 | 710 |
| Regulator ID | I.D. | NA | 128 | 113 | NA |
| Starting Pressure | inHg | -30 | -29 | -29 | -30 |
| Ending Pressure | inHg | -3 | -7.5 | -6 | -2 |
| 1 VOCs in Air Samples in Canisters at Ambient Levels by GC/MS | | | | | |
| cis-1,2-Dichloroethene | ug/m3 | 0.20 U | 0.20 U | 0.20 U | 0.20 U |
| trans-1,2-Dichloroethene | ug/m3 | 0.20 U | 0.20 U | 0.20 U | 0.20 U |
| Toluene | ug/m3 | 0.76 U | 2.2 | 8.8 | 0.76 U |
| Trichloroethene | ug/m3 | 0.14 U | 0.14 U | 0.38 | 0.14 U |
| Vinyl Chloride | ug/m3 | 0.13 U | 0.13 U | 0.13 U | 0.13 U |

ASR Number: 8778**RLAB Approved Sample Analysis Results****03/17/2021****Project ID:** YSB7J7**Project Desc:** TCE-Clinton Engines

| Analysis/ Analyte | Units | 9-__ | 10-__ | 11-__ | 12-__ |
|--|--------------|-------------|--------------|--------------|--------------|
| 1 Air VOA Field Parameters | | | | | |
| Canister ID | I.D. | 836 | 835 | 813 | 672 |
| Regulator ID | I.D. | 163 | 164 | NA | 6 |
| Starting Pressure | inHg | -28 | -28 | -30 | -30 |
| Ending Pressure | inHg | -5 | -4 | -3.5 | -4 |
| 1 VOCs in Air Samples in Canisters at Ambient Levels by GC/MS | | | | | |
| cis-1,2-Dichloroethene | ug/m3 | 0.20 U | 0.20 U | 0.20 U | 0.20 U |
| trans-1,2-Dichloroethene | ug/m3 | 0.20 U | 0.20 U | 0.20 U | 0.20 U |
| Toluene | ug/m3 | 220 | 0.76 U | 0.76 U | 0.76 U |
| Trichloroethene | ug/m3 | 0.38 | 0.14 U | 1.0 | 0.14 U |
| Vinyl Chloride | ug/m3 | 0.13 U | 0.13 U | 0.13 U | 0.13 U |

| | | | | | |
|--|--|--|--------------|----|---|
| EPA PROJECT MANAGER (Print) Yvonne Smith | SITE OR SAMPLING EVENT TCE Clinton Engines - VI Sampling | DATE OF SAMPLE COLLECTION(S) 02 22-24 2021 MONTH DAY YEAR | SHEET | | |
| | | | 1 | of | 1 |

[illegible]

12 CONTAINER(S) CONSISTING OF 3 CRATE(S) ☐ COMMERCIAL CARRIER
 ICE CHEST(S): OTHER ☒ SAMPLER CONVEYED (SHIPPING AIRBILL NUMBER)

| | | |
|--|--|---|
| RELINQUISHED BY (PWSAMPLER) Bethany Gatz Digitally signed by Bethany Gatz Date: 2021.02.24 18:31:07 -0600 SEaled UNSEaled | RECEIVED BY NICOLE ROBLEZ Digitally signed by NICOLE ROBLEZ Date: 2021.02.25 15:57:49 -0600 SEaled UNSEaled | REASON FOR CHANGE OF CUSTODY STC Analyses |
| RELINQUISHED BY (PWSAMPLER) SEaled UNSEaled | RECEIVED BY SEaled UNSEaled | REASON FOR CHANGE OF CUSTODY |
| RELINQUISHED BY (PWSAMPLER) SEaled UNSEaled | RECEIVED BY SEaled UNSEaled | REASON FOR CHANGE OF CUSTODY |
| RELINQUISHED BY (PWSAMPLER) SEaled UNSEaled | RECEIVED BY SEaled UNSEaled | REASON FOR CHANGE OF CUSTODY Page 8 of 8 |

APPENDIX G

**SUPERFUND REMOVAL SITE EVALUATION AND
REMOVAL PRELIMINARY ASSESSMENT**

SUPERFUND REMOVAL SITE EVALUATION and REMOVAL PRELIMINARY ASSESSMENT

I. SITE NAME AND LOCATION:

NAME: **TCE - Clinton Engines**

ADDRESS OR OTHER LOCATION IDENTIFIER: 605 East Maple Street

| | | |
|----------------------------------|-------------|------------|
| CITY: Maquoketa (Jackson County) | STATE: Iowa | ZIP: 52060 |
|----------------------------------|-------------|------------|

DIRECTIONS TO SITE: Site is at the intersection of East Maple Street and South Clark Street.

MAP ATTACHED: See Figures 1-3 of the Integrated Assessment Report.

II. PROGRAM CONTACTS:

| | |
|---|--|
| REQUESTED BY: Amie Davidson, Land Quality Bureau Chief | DATE OF REQUEST: 02/18/2020/ received by SUPR 02/17/2020 |
|---|--|

AGENCY/OFFICE: IDNR / Land Quality Bureau

MAILING ADDRESS: Wallace Building, 502 East 9th Street

| | | |
|------------------|-------------|------------|
| CITY: Des Moines | STATE: Iowa | ZIP: 50319 |
|------------------|-------------|------------|

| | |
|-------------------------|-------------------|
| TELEPHONE: 515-725-8200 | FAX: 515-725-8202 |
|-------------------------|-------------------|

EVALUATOR: Yvonne M. Smith, OSC

AGENCY/OFFICE: U.S. EPA – Region 7 Superfund / RROP

MAILING ADDRESS: 11201 Renner Boulevard

| | | |
|--------------|---------------|------------|
| CITY: Lenexa | STATE: Kansas | ZIP: 66219 |
|--------------|---------------|------------|

| | |
|-------------------------|-------------------|
| TELEPHONE: 913-551-7795 | FAX: 913-551-9058 |
|-------------------------|-------------------|

III. REMOVAL SITE EVALUATION CRITERIA [40 CFR 300.410(e)]

IS THERE A RELEASE AS DEFINED BY THE NCP: YES **X** or NO

EXPLAIN: A release of trichloroethene (TCE), dichloroethane (DCE), 1,1,2-trichloroethane (TCA), vinyl chloride (VC), and toluene to groundwater occurred. Solvents have been detected at concentrations exceeding maximum contaminant levels (MCL) in monitoring and temporary wells associated with the site. Based on chemical analyses, the contamination has been attributed to a release of solvents to groundwater from the former Clinton Engines facility at 605 E. Maple St. in west central Maquoketa, Iowa.

*(A **RELEASE** is defined as any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment of barrels, containers, and other closed receptacles containing any hazardous substances or pollutant or contaminant), but excludes workplace exposures; engine exhaust emissions; nuclear releases otherwise regulated; and the normal application of fertilizer. For purposes of the NCP, release also means threat of release.)*

IS THE SOURCE A FACILITY OR VESSEL AS DEFINED BY THE NCP: YES **X** or NO

EXPLAIN: The former small engine manufacturing operation is considered a facility as defined by the NCP.

*(A **FACILITY** is defined as any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or POTW), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, or aircraft or any site or area, where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located; but does not include any consumer product in consumer use or any vessel. A **VESSEL** is defined as any description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water other than a public vessel.*

**SUPERFUND REMOVAL SITE EVALUATION
and
REMOVAL PRELIMINARY ASSESSMENT**

III. REMOVAL SITE EVALUATION CRITERIA [40 CFR 300.410(e)] (continued):

DOES THE RELEASE INVOLVE A HAZARDOUS SUBSTANCE, OR POLLUTANT OR CONTAMINANT AS DEFINED BY THE NCP: YES X or NO

EXPLAIN: TCE, DCE, 1,1,2-TCA, and VC are CERCLA hazardous substances.

*(A **HAZARDOUS SUBSTANCE** means any substance, element, compound, mixture, solution, hazardous waste, toxic pollutant, hazardous air pollutant, or imminently hazardous chemical substance or mixture designated pursuant to the CWA, CERCLA, SDWA, CAA or TSCA. The term does not include petroleum products, natural gas, natural gas liquids, liquified natural gas, synthetic gas or mixtures of natural and synthetic gas. The definition of **POLLUTANT or CONTAMINANT** includes, but is not limited to, any element, substance, compound, or mixture, including disease-causing agents, which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions or physical deformations, in such organisms or their offspring. The term does not include petroleum products, natural gas, natural gas liquids, liquified natural gas, synthetic gas or mixtures of natural and synthetic gas.)*

IS THE RELEASE SUBJECT TO THE LIMITATIONS ON RESPONSE: YES or NO X

EXPLAIN: There are no limitations on response. The release was not of a naturally occurring substance or from products that are part of a structure.

*(The **LIMITATIONS ON RESPONSE** provisions of the NCP (40 CFR 300.400(B) states that removals shall not be undertaken in response to a release of a naturally occurring substance in its unaltered or natural form; from products that are a part of the structure of, and result in exposure within, residential buildings or business or community structures; or into public or private drinking water supplies due to deterioration of the system through ordinary use.)*

DOES THE QUANTITY OR CONCENTRATION WARRANT RESPONSE: YES or NO X

EXPLAIN: EPA's investigation was in response to high concentrations of solvents in groundwater reported by others in on-site and off-site temporary wells. EPA sampled sub-slab vapor and indoor air at nearby off-site residential and commercial structures, as well as domestic and municipal wells. Indoor air at no building contained concentration of a solvent above a Removal Management Level (RML). No contaminant was detected in domestic and municipal wells.

HAS A PRP BEEN IDENTIFIED: YES X or NO

EXPLAIN: The source of contamination is the former Clinton Engines facility. The City of Maquoketa currently owns the site.

IV. CONDITIONS TO WARRANT REMOVAL [40 CFR 300.415(b)(2)]:

ACTUAL OR POTENTIAL EXPOSURE TO HAZARDOUS SUBSTANCES, OR POLLUTANTS, OR CONTAMINANTS: YES X or NO

EXPLAIN: Indoor air samples collected by others at an on-site former office building that has been converted to a museum yielded TCE concentrations up to 23 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$)—above the EPA RML of $6 \mu\text{g}/\text{m}^3$ for workers.

ACTUAL OR POTENTIAL CONTAMINATION OF DRINKING WATER SUPPLIES: YES or NO X

EXPLAIN: Five domestic and three municipal wells were sampled, and no site-related VOC was detected. The domestic wells were about 150 feet deep, and the municipal wells were more than 1,000 feet deep. Any potential threat would be to the domestic wells. The nearest domestic wells are about 1 mile west and northwest of the site.

**SUPERFUND REMOVAL SITE EVALUATION
and
REMOVAL PRELIMINARY ASSESSMENT**

IV. CONDITIONS TO WARRANT REMOVAL [40 CFR 300.415(b)(2)] (continued):

HAZARDOUS SUBSTANCES, POLLUTANTS, OR CONTAMINANTS IN DRUMS, YES ☐ or NO ☒
BARRELS, OR BULK STORAGE CONTAINERS:

EXPLAIN: None – all former site features (except for the former office building) have been removed from the site.

HIGH LEVELS OF HAZARDOUS SUBSTANCES, POLLUTANTS, OR CONTAMINANTS YES ☒ or NO ☐
IN NEAR-SURFACE SOILS:

EXPLAIN: Sub-surface soil sampling results from 2006 borings east of the former office building indicated toluene (up to 285 milligrams per kilogram[mg/kg]), TCE (up to 8.37 mg/kg), *cis*-1,2-DCE (up to 3.31 mg/kg), and VC (up to 0.112 mg/kg).

CONDITIONS SUSCEPTIBLE TO IMPACT FROM ADVERSE WEATHER CONDITIONS: YES ☐ or NO ☒

EXPLAIN: No known conditions exist that would be affected by weather.

THREAT OF FIRE OR EXPLOSION: YES ☐ or NO ☒

EXPLAIN: No threat of fire or explosion exists on the site.

POTENTIAL FOR OTHER FEDERAL OR STATE RESPONSE MECHANISMS: YES ☒ or NO ☐

EXPLAIN: The site is enrolled in the voluntary Land Recycling Program (LRP) administered by the Iowa Department of Natural Resources.

OTHER SITUATIONS OR FACTORS WHICH POSE A THREAT: YES ☐ or NO ☒

EXPLAIN: No other known situations or factors could pose a threat.

V. POTENTIAL REMOVAL ACTIONS [40 CFR 300.415(d)]:

(NOTE: The following identifies potential removal actions which may be determined to be appropriate pending further review and study. The proposed actions should be considered preliminary proposals and are subject to change.)

SITE SECURITY: YES ☐ or NO ☒

EXPLAIN: Fencing of the site is not required.

SUPERFUND REMOVAL SITE EVALUATION **and** **REMOVAL PRELIMINARY ASSESSMENT**

V. PROPOSED REMOVAL ACTIONS [40 CFR 300.415(d)] (continued):

DRAINAGE CONTROL: YES ☐ or NO ☒

EXPLAIN: Additional drainage control to affect off-site runoff or on-site runoff is not expected to control contaminant migration.

STABILIZATION OR REMOVAL OF SURFACE IMPOUNDMENTS: YES ☐ or NO ☒

EXPLAIN: No surface impoundment exists on the site.

CAPPING OF CONTAMINATED SOIL: YES ☐ or NO ☒

EXPLAIN: Current extent of contaminated soil is not clear. Capping of soil may decrease the amount of contaminants that leach to groundwater; however, because depth to the surficial aquifer is shallow, the benefits of capping are likely minimal.

USE OF CHEMICALS TO CONTROL/RETARD SPREAD OF CONTAMINATION: YES ☒ or NO ☐

EXPLAIN: In-situ chemical oxidation (ISCO) could be applied to address contaminated soil and groundwater.

CONTAMINATED SOIL EXCAVATION: YES ☒ or NO ☐

EXPLAIN: After delineations of horizontal and vertical extents of contaminated soil, excavation would be a viable option to reduce on-site contamination.

REMOVAL OF DRUMS, TANKS, OR BULK STORAGE CONTAINERS: YES ☐ or NO ☒

EXPLAIN: No containers are known to exist on site.

CONTAINMENT, TREATMENT, OR DISPOSAL OF HAZARDOUS SUBSTANCES, POLLUTANTS, OR CONTAMINANTS: YES ☒ or NO ☐

EXPLAIN: After excavation, contaminated soil could be treated in situ or sent for off-site disposal.

SUPERFUND REMOVAL SITE EVALUATION **and** **REMOVAL PRELIMINARY ASSESSMENT**

VI. REMOVAL SITE EVALUATION DETERMINATION AND REMOVAL PRELIMINARY ASSESSMENT FINDINGS AND RECOMMENDATIONS:

REMOVAL NOT WARRANTED AT THIS TIME - REMOVAL SITE EVALUATION TERMINATED

(Cite one or more of the criteria from SECTION III. REMOVAL SITE EVALUATION CRITERIA, as the basis for the above determination.)

NOT A RELEASE

NOT A FACILITY OR VESSEL

NOT A HAZARDOUS SUBSTANCE OR POLLUTANT OR CONTAMINANT

SUBJECT TO RESPONSE LIMITATIONS

INSUFFICIENT QUANTITY OR CONCENTRATION

WILLING/CAPABLE PRP IDENTIFIED

COMMENT:

REMOVAL RECOMMENDED [☐ EMERGENCY ☐ TIME-CRITICAL ☐ NON-TIME-CRITICAL]

(Cite one or more of the conditions or factors from Section IV. CONDITIONS TO WARRANT A REMOVAL ACTION, as a basis for recommending that a removal action be conducted.)

EXPOSURE TO HAZARDOUS SUBSTANCES OR POLLUTANTS OR CONTAMINANTS

ADVERSE WEATHER IMPACTS

CONTAMINATED DRINKING WATER

FIRE/EXPLOSION THREAT

CONTAMINATED SOIL

DRUMS, BARRELS OR CONTAINERS

NO OTHER RESPONSE MECHANISM

OTHER FACTORS

(Identify one or more of the removal actions listed in Section V. REMOVAL ACTIONS WHICH MAY BE APPROPRIATE, as examples of the types of response actions which are recommended.)

SITE SECURITY

DRAINAGE CONTROL

IMPOUNDMENT STABILIZATION

REMOVAL OF DRUMS, BARRELS, ETC.

SOIL CAPPING

SOIL EXCAVATION

CONTAIN/TREAT/DISPOSE OF WASTES

CHEMICAL CONTROLS

ALT. DRINKING WATER SUPPLIES

COMMENT:

X ADDITIONAL REMOVAL SITE EVALUATION RECOMMENDED

(Cite one or more of the conditions or factors from Section IV. CONDITIONS TO WARRANT A REMOVAL ACTION, as a basis for recommending that additional site evaluation be performed.)

X EXPOSURE TO HAZARDOUS SUBSTANCES OR POLLUTANTS OR CONTAMINANTS

ADVERSE WEATHER IMPACTS

CONTAMINATED DRINKING WATER

FIRE/EXPLOSION THREAT

X

CONTAMINATED SOIL

DRUMS, BARRELS OR CONTAINERS

NO OTHER RESPONSE MECHANISM

OTHER FACTORS

(Identify one or more of the removal actions listed in Section V. REMOVAL ACTIONS WHICH MAY BE APPROPRIATE, as examples of the types of response actions which may be appropriate pending the results of further site evaluation.)

SITE SECURITY

DRAINAGE CONTROL

IMPOUNDMENT STABILIZATION

REMOVAL OF DRUMS, BARRELS, TANKS

SOIL CAPPING

X

SOIL EXCAVATION

X CONTAIN/TREAT/DISPOSE OF WASTE

X

CHEMICAL CONTROLS

ALTERNATIVE DRINKING WATER SUPPLIES

COMMENT: The Iowa Land Recycling Program (LRP) is addressing on-site contamination. Off-site migration of contaminated groundwater has been documented. Additional information should be obtained to define the nature and extent of on-site soil contamination.

SUPERFUND REMOVAL SITE EVALUATION and REMOVAL PRELIMINARY ASSESSMENT

VII. ADDITIONAL INFORMATION OR COMMENTS:

In June and July 2020, START collected indoor air samples at 28 locations, at 23 residential and five commercial properties. Ambient air samples were collected at two residential properties. Sampling focused on residential areas west of the site and at buildings above or near known groundwater contamination. In July 2020, START also collected soil-gas samples at 12 locations, subsurface soil samples at six locations near a sanitary sewer line leading from the former site, and domestic and municipal well samples from eight wells. All samples but the soil-gas samples were submitted to the EPA Region 7 laboratory for VOCs analysis. Soil gas samples were analyzed via mobile laboratory on site. In June 2020, air samples were analyzed for TCE only, with quick turnaround times to quickly determine the magnitude of risk to nearby residents. Air samples collected in July were analyzed for TCE plus *cis*- and *trans*-1,2-DCE, VC, and toluene. The addition of analytes occurred because those compounds also were reported at high concentrations in groundwater. Soil and groundwater for drinking water wells were analyzed for the full suite of VOC analytes.

Results from the initial round of air sampling in June 2020 showed very little TCE in the 25 sub-slab vapor, indoor air, and ambient air samples collected. TCE was found in one sub-slab sample ($3.1 \mu\text{g}/\text{m}^3$), and one indoor air sample ($1.9 \mu\text{g}/\text{m}^3$). Both detections were below EPA's RMLs. Subsequent sub-slab vapor and indoor air sampling at 15 new properties in July 2020 yielded similar low concentrations. TCE was detected in two sub-slab vapor samples at maximum concentration of $0.76 \mu\text{g}/\text{m}^3$, and in four indoor air samples at maximum concentration of $0.64 \mu\text{g}/\text{m}^3$. No *cis*- or *trans*-1,2-DCE or VC was detected in any sub-slab vapor sample.

VIII. CERTIFICATION

SIGNATURE: _____
Yvonne M. Smith

DATE

POSITION/TITLE: Federal On-Scene Coordinator

OFFICE/AGENCY: U.S. EPA – Region 7 / Superfund / RROP

ATTACHMENT 1
SOIL GAS RESULTS

SOIL GAS RESULTS - MOBILE LAB SUMMARY SHEET

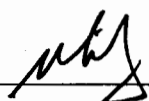
Client: TetraTech
Method: TO-14
Date: July 21, 2020

Project: Former Clinton Engine Site, Maquoketa, IA
Matrix: Soil Gas
Sample Container: 3-Liter Tedlar Bag

| Sample ID | Sample Date | Dilution Factor | TCE ppbv | cis-1,2-DCE ppbv | trans-1,2-DCE ppbv | Vinyl Chloride ppbv | Toluene ppbv |
|-----------|-------------|-----------------|-------------|---------------------|-----------------------|---------------------------|-----------------|
| SG-01 | 7/21/2020 | 1 | < 7.0 | < 10.0 | < 10.0 | < 16.0 | < 10.0 |
| SG-02 | 7/21/2020 | 1 | < 7.0 | < 10.0 | < 10.0 | < 16.0 | < 10.0 |
| SG-09 | 7/21/2020 | 1 | < 7.0 | < 10.0 | < 10.0 | < 16.0 | < 10.0 |
| SG-08 | 7/21/2020 | 1 | < 7.0 | < 10.0 | < 10.0 | < 16.0 | < 10.0 |
| SG-05 | 7/21/2020 | 1 | < 7.0 | < 10.0 | < 10.0 | < 16.0 | < 10.0 |
| SG-04 | 7/21/2020 | 1 | < 7.0 | < 10.0 | < 10.0 | < 16.0 | < 10.0 |
| SG-03 | 7/21/2020 | 1 | < 7.0 | < 10.0 | < 10.0 | < 16.0 | < 10.0 |
| SG-07 | 7/21/2020 | 1 | < 7.0 | < 10.0 | < 10.0 | < 16.0 | < 10.0 |
| SG-06 | 7/21/2020 | 1 | < 7.0 | < 10.0 | < 10.0 | < 16.0 | < 10.0 |
| SG-10 | 7/21/2020 | 1 | < 7.0 | < 10.0 | < 10.0 | < 16.0 | < 10.0 |
| SG-11 | 7/21/2020 | 1 | < 7.0 | < 10.0 | < 10.0 | < 16.0 | < 10.0 |
| SG-12 | 7/21/2020 | 1 | < 7.0 | < 10.0 | < 10.0 | < 16.0 | < 10.0 |

Flags: i - estimated concentration

Analyst Signature: _____



SAMPLE RECEIVING FORM

| PROJ. NO. | | PROJECT NAME | | | | | NO. OF CON- TAINERS | REMARKS | | | | | | | |
|------------------------------|---------|--------------|-------|------|-----------------------|-------------|--|-------------------------------------|--|------------------------------|--|-------------|----------------------------------|--------------------------|--|
| | | | | | | | | | | | | | | | |
| SAMPLERS: | | | | | | | <div style="text-align: center;"> </div> | | | | | | | | |
| BGS - Mike Costlow | | | | | | | | | | | | | | | |
| Lab ID | DATE | TIME | COMP. | GRAB | Sample Identification | | | | | | | | | | |
| 812 | 7/21/20 | 1015 | X | | SG-01 | 1 | X | | | | | | 3-liter Tedlar Bags - Soil Vapor | | |
| 813 | " | 1100 | X | | SG-02 | 1 | X | | | | | | | | |
| 814 | " | 1200 | X | | SG-09 | 1 | X | | | | | | | | |
| 815 | " | 1245 | X | | SG-08 | 1 | X | | | | | | | | |
| 816 | " | 1320 | X | | SG-05 | 1 | X | | | | | | | | |
| 817 | " | 1355 | X | | SG-04 | 1 | X | | | | | | | | |
| 818 | " | 1425 | X | | SG-03 | 1 | X | | | | | | | | |
| 819 | " | 1510 | X | | SG-07 | 1 | X | | | | | | | | |
| 820 | " | 1540 | X | | SG-06 | 1 | X | | | | | | | | |
| 821 | " | 1615 | X | | SG-10 | 1 | X | | | | | | | | |
| 822 | " | 1705 | X | | SG-11 | 1 | X | | | | | | | | |
| 823 | " | 1730 | X | | SG-12 | 1 | X | | | | | | | | |
| Relinquished by: (Signature) | | | | | | Date / Time | | Received by: (Signature) | | Relinquished by: (Signature) | | Date / Time | | Received by: (Signature) | |
| Relinquished by: (Signature) | | | | | | Date / Time | | Received by: (Signature) | | Relinquished by: (Signature) | | Date / Time | | Received by: (Signature) | |
| Relinquished by: (Signature) | | | | | | Date / Time | | Reviewed by Laboratory: (Signature) | | Date / Time | | Remarks | | | |
| | | | | | | | | | | 7/27/20 1745 | | | | | |

Former Clinton Engine Site - Maquoketa, IA

7/21/2020 Soil Gas Collection

- 0800 onsite w/ R's & Lab - Mike Oursky & Mike Costlow w/ BGS
- 0830 meet w/ Tetra Tech - Nick go over soil gas sampling
- 0900 Set up rig on 1st location, marked on map as SG-01
- 0930 Push SG-01 to 8' using Geoprobe PRT Soil gas system
pulled back 6" to release point. Purged 180 ml
- 1015 Collect SG-01 sample using 3-Liter Tedlar bag, 1/4" Poly tubing
- 1045 Start probing SG-02, pushed to 8' pulled back 6" to release pt.
- 1100 collected SG-02, purged 180 ml.
- 1150 Start SG-09, pushed to 8' pulled back 6", groundwater was pulled into tubing. pulled back another 6", more water, pulled back to 6.5'
- 1200 collected sample SG-09 w/ TD of 6.5", purged 180 ml
- 1220 Start SG-08 to 8', pulled GW into tubing. pulled Reel back out to 6' still water, pulled back to 4' no water begin purging.
- 1245 collected SG-08, TD 4', purged 180 ml.
- 1305 Start SG-05 to 8', purged 180 ml
- 1320 Collect sample SG-05
- 1340 started SG-04 to 8', purged 180 ml
- 1355 collect sample SG-04
- 1415 start SG-03, to 8', purged 180 ml
- 1425 collect sample SG-03
- 1450 start SG-07, TD 8', purged 180 ml
- 1510 collect sample SG-07
- 1520 start SG-06, TD 8', purged 180 ml
- 1540 collect sample SG-06
- 1600 start SG-10, TD 8', purged ~~180~~ ml
- 1615 collect SG-10
- 1645 start SG-11, TD 8', purged 180 ml
- 1705 collect SG-11
- 1720 start SG-12, TD 8', purged 180 ml
- 1730 collect sample SG-12

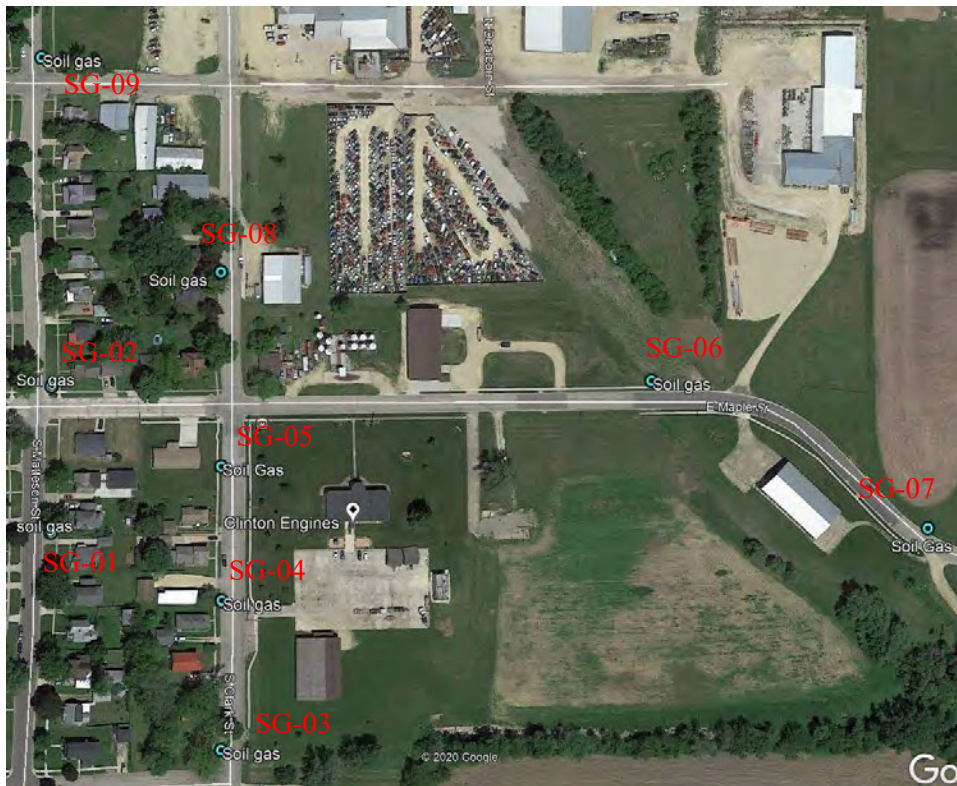


Figure 2: Soil-Gas sampling locations. Nine of 12 locations, three additional locations located north.





8110 Cole Pkwy. Shawnee, KS 66227

Office: 913-441-1088

e-mail: midwestbgs@sbcglobal.net

Quality Assurance / Quality Control Summary

**TetraTech
Former Clinton Engines Facility
Maquoketa, IA**

Calibration Summary

The laboratory data for this project site was obtained using a gas chromatograph (GC). The GC is an SRI 8610C with a 60-meter Restek Capillary Column equipped with a Photoionization Detector (PID) and Flame Ionization Detector (FID). The GC was initially calibrated using a 5-level calibration curve and checked each day using a midpoint level. The low end of the calibration level determined the reporting limit for this project.

Methods

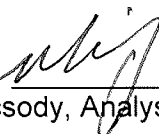
The sample introduction and analytical method followed in this project included USEPA TO-14 Method. Samples were collected in 3-Liter Tedlar Bags.

Calibration Criteria

The initial multi-level calibration curve for all target analytes produced a correlation coefficient (r-value) of no less than 0.99. An initial calibration was conducted at the beginning of the project and a final one at the end of the project. Two calibration verifications were run during this project. The results are included in the following attachments.

Method and Field Blanks

Blank samples were run after each calibration check and after samples that exhibited elevated compound detections. No samples had elevated detections.

Signed: 
Mike Ocsody, Analyst

QUALITY CONTROL DATAFormer Clinton Engines Facility
Maquoketa, IAClient: TetraTech
Sample ID: Calibration Verification-1
Date Analyzed: 7/21/2020Lab ID: 810
QC Sample: 1 of 3
Method: TO-14

| Parameter | Units | Spike Concentration | CV Result | CV % Recovery | % Recovery Limits |
|----------------|-------|------------------------|--------------|------------------|----------------------|
| Vinyl Chloride | ppbv | 116 | 119 | 102 | 75-125 |
| trans-1,2-DCE | ppbv | 75 | 69 | 92 | 75-125 |
| cis-1,2-DCE | ppbv | 75 | 79 | 106 | 75-125 |
| TCE | ppbv | 56 | 57 | 101 | 75-125 |
| Toluene | ppbv | 78 | 82 | 106 | 75-125 |

Client: TetraTech
Sample ID: Method Blank-1
Date Analyzed: 7/21/2020Lab ID: 811
QC Sample: 2 of 3
Method: TO-14

| Parameter | Reporting Limit | Units | Result |
|----------------|-----------------|-------|--------|
| Vinyl Chloride | 16.0 | ppbv | < 4.0 |
| trans-1,2-DCE | 10.0 | ppbv | < 4.0 |
| cis-1,2-DCE | 10.0 | ppbv | < 4.0 |
| TCE | 7.0 | ppbv | < 4.0 |
| Toluene | 10.0 | ppbv | < 4.0 |

Client: TetraTech
Sample ID: Calibration Verification-2
Date Analyzed: 7/21/2020Lab ID: 824
QC Sample: 3 of 3
Method: TO-14

| Parameter | Units | Spike Concentration | CV Result | CV % Recovery | % Recovery Limits |
|----------------|-------|------------------------|--------------|------------------|----------------------|
| Vinyl Chloride | ppbv | 116 | 96 | 83 | 75-125 |
| trans-1,2-DCE | ppbv | 75 | 60 | 80 | 75-125 |
| cis-1,2-DCE | ppbv | 75 | 69 | 92 | 75-125 |
| TCE | ppbv | 56 | 50 | 90 | 75-125 |
| Toluene | ppbv | 78 | 73 | 93 | 75-125 |